Pennsylvania
Nonpoint Source Implementation Program
FFY2004 Nonpoint Source Annual Report

October 1, 2003 through September 30, 2004

The Nonpoint Source Liaison Workgroup is the primary source of information for this Annual Report. The Pennsylvania Department of Environmental Protection, Nonpoint Source Management Program provides assistance to the NPS Liaison Workgroup. Section 319(h)(11) of the Federal Clean Water Act requires states to report annually on progress in meeting the milestones in their Non-point Source Management Program.

Commonwealth of Pennsylvania
Department of Environmental Protection
Bureau of Watershed Management, Division of Watershed Protection

January 2005

EXECUTIVE SUMMARY

Pennsylvania's Nonpoint Source (NPS) Program was developed in response to Section 319 of the federal Clean Water Act (CWA) to address problems caused by pollution from non-point sources. Unlike point source pollution, which comes from a pipe, the causes of non-point source pollution cannot be easily defined or quantified. Sometimes referred to as "polluted runoff," non-point source pollution is generally caused by storm water runoff across the land or infiltration of pollutants into the groundwater.

The three largest sources of non-point source pollution contributing to impairment of stream aquatic life use support in Pennsylvania are from abandoned mine drainage (AMD), agriculture and urban runoff/storm sewers. The major causes of aquatic life impairment in streams on a statewide basis are siltation, metals, nutrients, and pH. Pennsylvania has documented in current 303(d) list of impaired waters data that there are 4,036 miles of surface waters impaired from abandoned mine drainage sources, 3,876 miles from agriculture, and 1,753 miles from urban runoff/storm sewers. Other nonpoint sources include abandoned oil and gas wells, construction activities, on-lot sewage systems, landfill leachate, hydro-modification (stream channel and stream bank stability) and silviculture (poor forestry practices). Of these, construction activities, hydro-modification, and oil and gas wells are the most significant.

The federal Clean Water Act requires each state to prepare an assessment report and a management plan for their state Nonpoint Source Management Program. The management program outlines the program components to be used to address the non-point source problems. Section 319 of the CWA requires each state to update its comprehensive plan to manage non-point source pollution every five years. Pennsylvania is in the process of updating its NPS plan, which was last updated and approved in 1999. The update includes a variety of regulatory, non-regulatory, financial and technical assistance programs needed to improve and maintain surface and groundwater quality, and outlines the Commonwealth's plans to address non-point source pollution over the five-year period. Pennsylvania began to prepare a 2004 NPS Management Program update in 2004.

Pennsylvania has received approximately $56 million from the Section 319 NPS grant program from FFY 1990 through FFY 2004. The FFY1999, FFY2000 and FFY2001 Section 319 NPS grants were completed in 2001. These funds have been used to institutionalize a non-point source program, implement various innovative technologies to treat non-point source pollution problems, develop an educational program and begin several comprehensive watershed initiatives. Pa. now has four NPS National Monitoring Program projects, and is providing substantial funding to comprehensive watershed initiatives throughout the state. Pennsylvania's Chesapeake Bay Program, the Nutrient Management Act (Act 6 of 1993), County Conservation District Assistance, the Storm Water Management Fund, Coastal Zone Management Program, USDA's Environmental Quality Incentives Program (EQIP) and the Environmental Stewardship and Watershed Protection Grant also known as Growing Greener (GG) are additional significant NPS funding sources.

Since its inception in 1999, Growing Greener has provided $132.5 million in watershed grants, with $5.5 million awarded during GG round six in 2004. Local partners have added another $206 million from their own resources. The Growing Greener program's impact reaches beyond environmental improvement. It extends to Pennsylvania's General Assembly where the tremendous value of the program became clear to legislators and the Growing Greener funding was extended through 2012. This translates to $547.7 million from the original $241.5 million allocated to the Pennsylvania DEP. This funding was made possible through a $4 per ton tipping fee on solid waste disposal in Pennsylvania's municipal waste landfills.

Over the past year, Pennsylvania has begun several new initiatives and are continuing to improve Pa.'s NPS program. There is a new focus on Total Maximum Daily Load (TMDL) priority watersheds where we are focusing Watershed Implementation Planning efforts primarily in small AMD or agriculturally impacted watersheds. The Schuylkill River watershed in southeastern Pa. received an EPA Watershed Initiative grant, providing over $1 million for NPS problem abatement in the AMD, agriculture, and stormwater areas. Conservation districts (CD) continue to play an important role as the Growing Greener funds support 65 watershed specialists in 64 county conservation districts and the City of Philadelphia

Water Department. Pennsylvania is improving its methods of tracking Best Management Practice (BMP) implementation and estimating pollutant load reductions from nonpoint pollutant sources.

Beyond the 2003-2004 Highlights, Pa.'s NPS Annual Report also highlights many individual successes and accomplishments in Section III.

2003-2004 Highlights

Pennsylvania's Nonpoint Source Program has accomplished much over the past year. These achievements help to meet or exceed the Goals established in Pennsylvania's Nonpoint Source Management Program – 1999 Update, Goals and Objectives (Part A). See www.dep.state.pa.us DEP Keyword "NPS Management Program" and look for the Goals and Objectives (Part A).

Some of Pennsylvania's achievements during the FFY2004 period are summarized in Table 1.

Table 1: FFY2004 Highlights

The FY2004 Section 319(h) NPS Implementation grant for $6.8 million was awarded in September 2004. Pennsylvania has received more than $56 million from the Section 319 Grant Program (FFY1990 through FFY2004).
Growing Greener Initiative Round VI awards $5.5 million for watershed restoration and protection. Growing Greener has provided $132.5 million in watershed restoration and protection grants since 1999. Local partners have added another $206 million from their own resources.
The EPA Targeted Watersheds Grants Program awarded funds to the Schuylkill River Action Network (SAN) (www.schuylkillactionnetwork.org) project in 2004. The Dunkard Creek Watershed Restoration (Greene County, Pennsylvania and northern West Virginia), Christina River Basin Initiative (Chester County, Pennsylvania and northern Delaware), and the Susquehanna River Headwaters (Bradford and Susquehanna Counties, Pennsylvania and New York State) Targeted Watersheds projects were awarded in 2003.
Pennsylvania's FFY2003 and FFY2004 Section 319 Grants establish Watershed Implementation Planning focusing on TMDL approved watersheds. Eleven Phase I TMDL approved watersheds are completing Watershed Implementation Plans with FFY2003 and FFY2004 funding.
The USDA-funded Conservation Reserve Enhancement Program (CREP) now includes counties in the northern Susquehanna River basin and the Ohio River basin. Additional funds for riparian buffers have been made available in the original 20-county CREP area in the lower Susquehanna River basin.
Pennsylvania funds 4 of the 23 federal CWA Section 319 National Monitoring Program projects. All four National Monitoring Program (NMP) projects are underway in Pennsylvania. The Villanova Urban Storm Water Best Management Practices (BMPs) demonstration site in Delaware County was approved as an EPA Section 319 National Monitoring Project (NMP) in October 2003 (www.villanova.edu/vusp). The Swatara Creek NMP (abandoned mine drainage); Stroud Water Research Center NMP (riparian reforestation project in an agricultural watershed); and Pequea and Mill Creek NMP (effectiveness of agricultural best management practices) all continue, with the Pequea & Mill Creek project awaiting the final published report. See the EPA's National Monitoring Program website at www.epa.gov for additional information about the National Monitoring Program projects.
The Pennsylvania DEP contracts with 64 conservation district watershed specialists (CDWS) in 64 county conservation districts and one watershed specialist with the City of Philadelphia Water Department. Counties with watersheds not covered by a CDWS are McKean and Cameron counties. Pennsylvania's Growing Greener Initiative funds these positions.

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SECTION I. Milestones Completed

The majority of the non-point source (NPS) action plan milestones have been completed. See Pa NPS Annual Reports on the DEP website www.dep.state.pa.us by navigating to Subjects/Nonpoint Source Management/Program Initiatives/Annual Report.

NPS workgroups provide progress updates for individual workgroups' accomplishments, and challenges for the upcoming year. These relate to the NPS action plans in the NPS Management Program-1999 Update. Workgroups' accomplishments are provided in Section III.

The NPS Management Program-1999 Update includes both Long Term Goals and Short Term Objectives (See Part A. Section 1.).

Goals A and B are long-term efforts that will not be completed during this report period.

A. Conduct restoration activities on all agricultural, construction, land disposal, silviculture, and urban NPS impacted streams for the purpose of attaining designated uses by the year 2015; Conduct necessary restoration activities on all abandoned mine and hydrologic/habitat modified impacted streams for the purpose of attaining designated uses by the year 2025.

B. Achieve a 33 percent net gain in healthy, diverse, aquatic ecosystems by 2010, both by maintaining 1998 levels of such systems and by restoring degraded ones.

Successful completion of these goals depends on many factors, including 1) Pennsylvania's State Surface Water Assessment Program (SSWAP), 2) non-point source project implementation, 3) TMDL program implementation, 4) project partner willingness to implement and maintain projects and 5) funding. Therefore these Goals will continue to be addressed in future NPS Management Program updates.

Long-Term Goals and Short-Term Objectives

Long-Term Goals and Short-Term Objectives (Section I, Pages 1 to 4) are summarized in the following matrix.

Many of these Goals and Short-term Objectives have been completed; several of them are ongoing; no information has been provided for others.

Goal A.

Part a. Conduct restoration activities on all agricultural, construction, land disposal, silvicultural, and urban non-point source impacted streams for the purpose of attaining designated uses.	Anticipated Output	Anticipated Completion Date	Status
	Implement projects on impaired streams	By 2015	Ongoing
Objectives: (1) Use the Integrated Waters List (303(d) list of impaired waters), source water protection areas, and special protection waters for future watershed prioritization. Encourage local watershed groups' development and local interests to begin watershed protection and restoration activities. (2) Develop and begin implementation of watershed implementation plans for TMDL-approved water bodies.			

Progress: **(1) Being done now.** **(2) Being implemented.**			
Part b. Conduct necessary restoration activities on all abandoned mine and hydrologic/habitat modified impacted streams for the purpose of attaining designated uses.	Anticipated Output	Anticipated Completion Date	Status
	Conduct restoration activities	By 2025	Ongoing
Progress: **This is being done. Section 319 funds are targeted to both AMD and Hydrologic/Habitat Modification impaired waters.**			

Goal B.

Achieve a 33 percent net gain in healthy, diverse, aquatic ecosystems both by maintaining 1998 levels of such systems and by restoring degraded ones.	Anticipated Output	Anticipated Completion Date	Status
	Meet designated water quality uses and improve existing degraded waters	By 2010	Ongoing
Objectives: (1) Focus the incremental 319 funds in FY99-2000 on the 18 priority Category I Watersheds identified in the Unified Watershed Assessment. The remaining five Category I Watersheds will be priorities for attention in FY2001 and beyond. (2) In 1999, continue implementation of Pennsylvania's Watershed Restoration and Assistance Program, which provides state funding for watershed groups' restoration initiatives and demonstration projects.			
Progress: **(1) Completed.** (2) **Completed.**			

Goals C. through J. are shorter-term goals, developed in 1999 to be completed in a five-year period.

Goal C.

Coordinate all watershed-based state and federal programs to deliver consistent policies and services to local watershed protection and restoration efforts.	Anticipated Output	Anticipated Completion Date	Status
	Program coordination	2004-2005	Ongoing
Objectives: (1) Utilize NPS Liaison Work group to communicate NPS programs and issues. (2) Publish a handbook for citizen volunteers on conducting water monitoring and watershed assessments for local and state use. (3) Establish and expand the use of alternative monitoring by Pennsylvania's Ten Senior Environmental Corps and other volunteer groups working in conjunction with DEP by 2001. (4) Incorporate FY96 EPA Grant Guidance regarding Nine Key Elements into the Commonwealth's Program to achieve "Enhanced Benefits Status" in 1999.			

Progress: **(1) Completed.** **(2) Completed publication and distribution of "Designing Your Monitoring Program Technical Handbook."** **(3) Completed.** **(4) Elements included in NPS Management Program. "Enhanced Benefit Status" was not received by EPA.**

Goal D.

Increase by five per year the number of local watershed groups statewide to develop and implement a comprehensive watershed plan to conserve, protect and restore beneficial uses of all surface and groundwater resources.	Anticipated Output	Anticipated Completion Date	Status
	New watershed organizations	2004-2005	Ongoing
Objectives: (1) In 1999, Pennsylvania DEP and partners will conduct a watershed conference on watershed management. (2) In 1999, Pennsylvania DEP and partners will conduct a conference for watershed and conservation groups focusing on abandoned mine drainage and remediation of watersheds impaired by AMD. (3) In 1999, the Citizens' Volunteer Monitoring Program will conduct three workshops for monitoring groups (monitoring of AMD, stream bank restoration and lakes). (4) In 1999, the Pennsylvania DEP will conduct four workshops on state and federal funding programs to address polluted runoff.			
Progress: **(1) Completed.** **(2) Completed.** **(3) Completed.** **(4) Completed. Growing Greener workshops through 2003 continue to promote funding programs. The annual Statewide Watershed Conference initiated in 2000 was held in September 2004.**			

Goal E.

Develop new and utilize existing sources of funding for remediation/restoration of pollution problems associated with NPS.	Anticipated Output	Anticipated Completion Date	Status
	New funding sources.	2004-2005	Ongoing

Objectives:
(1) In 1999, implement Agri-Link as a source of low interest loans to farm owners or operators to implement BMPs in nutrient management plans.
(2) Increase by 10 percent the use of the PENNVEST Low Interest Loan Program to address the public health and environmental needs from malfunctioning on-lot sewage disposal systems by 2003.
(3) Increase by 10 percent the use of PENNVEST Low Interest Loans to construct, improve or rehabilitate public storm water facilities by 2002.
(4) Revise Pennsylvania's Clean Water State Revolving Fund (CWSRF) Intended Use Plan to address funding of NPS activities through the CWSRF and develop mechanisms to market the CWSRF for addressing NPS problems in 2000.
(5) Develop an integrated priority ranking system to assist in making CWSRF project funding decisions for point source and NPS activities in 2000.
(6) In 1999, implement the use of the Drinking Water State Revolving Fund set-aside funds to enhance source water protection activities and protect human health in areas where NPS is a major problem.
(7) In 1999, introduce the Growing Greener budget initiative to redirect existing funding towards additional NPS projects and to enhance local abilities to manage on a watershed basis.
(8) In 2000, update and expand existing fact sheet, *Potential Funding Sources for Watershed Groups*.
(9) By 2000, establish an approved Conservation Reserve Enhancement Program (CREP).

Progress:
(1) Agri-Link has been implemented and has provided $549,971 in low-interest loans to agricultural producers through December 2001 (FY99, FY2000, and first half of FY2001 state budget cycles).
(2) & (3) PENNVEST loans for NPS issues, i.e., on-lot septic and storm water, increased substantially.
(4) & (5) The CWSRF in Pennsylvania is being used for Brownfields reclamation and some AMD projects.
(6) Drinking Water State Revolving Fund set-aside funds have been used to assess potential contaminant sources of public water supplies and to assist local communities in developing protection programs.
(7) The Commonwealth's Growing Greener (GG) initiative was passed by the state legislature in December 1999. The first round of GG grants was awarded in early 2000. In June 2002, legislation reauthorized GG through 2012 and doubled funding ($547 million) to the Pa DEP.
(8) An updated fact sheet was completed.
(9) **CREP was approved in June 2000. Pennsylvania's initial goal of enrolling 100,000 acres in the 20-county lower Susquehanna River basin has been achieved. The Ohio River basin expansion to the CREP program was approved in 2004, and an additional supplement specifically for the riparian buffer conservation practice, CP-22, was also approved for the original 20-county area.**

Goal F.

Use Geographic Information System (GIS) technology to show stream assessments, locate BMPs installed and report and track environmental improvements. Use as an interface with other data to develop TMDLs.	Anticipated Output	Anticipated Completion Date	Status
	GIS layers developed	By 2003	Ongoing

Objectives:
(1) Insure that the NPS Program GIS is a component of the Pennsylvania DEP's system, compatible with other agencies involved in the development and use of this technology. Use GIS to prioritize watersheds for assessment. Develop stream and lake GIS coverage's in 1999.
(2) Evaluate all free-flowing streams in the Commonwealth using the State Surface Water Assessment Program (SSWAP) by the year 2003.

Progress: **(1) Completed GIS coverage's for streams and lakes.** **(2) The SSWAP was initiated in 1997. A total of 67,979 stream miles have been assessed for Aquatic Life Use Support through September 2003.**

Goal G.

Rely on incentives, assistance and education, as well as, the existing regulatory programs to emphasize the conservation of existing resources in site design and avoidance and to comprehensively address NPS problems in watershed restoration plans.	Anticipated Output	Anticipated Completion Date	Status
	Implement incentives	By 2003	Ongoing
Objectives: (1) By January 2000, begin implementation of Pennsylvania's new CREP including information and outreach. (2) Provide financial incentives for infrastructure projects that utilize design alternatives that promote NPS pollution prevention through conservation of resources. Make funding commensurate with level of protection provided by nonstructural BMPs. (3) In 1999, amendments to Pennsylvania's anti-degradation regulations including requirements that the Pennsylvania DEP assure that BMPs for non-point source controls be achieved will be presented as final rulemaking to the Environmental Quality Board. (4) Final regulatory changes to Pennsylvania's erosion control regulations (Chapter 102) to provide flexibility in implementing BMPs, clarifying permitting and planning requirements, and integrating the federal NPDES storm water construction permits into Pennsylvania's existing regulatory program will be completed in 1999. (5) Implement the Pennsylvania DEP's Confined Animal Feeding Operations (CAFO) strategy to ensure CAFO's are constructed and managed in an environmentally sound manner, while also ensuring that agricultural production is profitable, economically feasible and based on sound technology and practicable production techniques.			
Progress: **(1) Completed. Information and outreach continues.** **(2) Green Building Initiative and incentives are being promoted. DEP website www.dep.state.pa.us provides information.** **(3) Amendments to Pennsylvania's Anti-Degradation Program were presented to EQB in 2003.** **(4) Chapter 102 Regulations were revised in 2002.** **(5) Pennsylvania's CAFO Strategy was completed in 2002. CAFO program regulations are being finalized.**			

Goal H.

Develop or expand six non-point source education and outreach efforts. Incorporate public input into all phases of the program.	Anticipated Output	Anticipated Completion Date	Status
	Implement education/outreach efforts statewide	By 2001	Completed

Objectives:
(1) Continue the development and implementation of the Statewide Education Program using assistance from the Pennsylvania Association of Conservation Districts Education office and the League of Women Voters of Pennsylvania.
(2) Continue to promote Farm-A-Syst programs to provide a mechanism for a farmer to evaluate the environmental health of his/her farm.
(3) In 1999, establish a delivery system for Home-A-Syst to enable homeowners to assess the environmental health of their home and daily living.
(4) In 2000, convene a statewide conference or a series of regional conferences to focus on innovative, non-regulatory solutions to non-point source pollution based on economic incentives, voluntary initiatives, and education.
(5) By 2000, develop a user-friendly publication on Section 319 projects which documents the environmental improvements accomplished by the implementation of these projects. Publish and use for outreach and as an overview of innovative technologies. Post on web and update annually.
(6) By 2001, establish a Clearinghouse for watershed groups, municipalities, counties, agencies, consultants and educators on technical, financial and communication resources available on watershed protection and restoration.

Progress:
(1) PACD and LWV NPS Education/Outreach programs are delivered through Section 319 grants.
(2) Eleven Farm-A-Syst evaluation forms were completed through 2003-2004.
(3) Home-A-Syst delivery is through Pennsylvania county conservation districts and Penn State Cooperative Extension county offices.
(4) Growing Greener statewide conference held annually since 2000.
(5) " NPS Success Stories" printed and distributed in 2002.
(6) **Growing Greener (www.growinggreener.org), Pennsylvania Organization for Waters and Rivers (POWR) (www.pawatersheds.org), Pennsylvania Association of Conservation Districts (PACD) (www.pacd.org), Western Pa Coalition for Abandoned Mine Reclamation (www.AMRClearinghouse.org), Eastern Pa Coalition for Abandoned Mine Reclamation (www.orangewaternetwork.org) and Pa DEP (www.dep.state.pa.us) all provide clearinghouses for watershed protection & restoration.**

Goal I.

Assure that cost-effective and reasonable Best Management Practices for non-point source pollutant control are achieved.	Anticipated Output	Anticipated Completion Date	Status
	BMPs implemented	By 2002	Ongoing

Objectives:
(1) Existing regulatory requirements contained in the Pennsylvania DEP's regulations (Chapter 101, 102, 105), Nutrient Management Act (Act 6), Pennsylvania Clean Streams Law and programs such as the Dirt and Gravel Road Program (DGRP), NPS Management (Section 319), WRAP, Coastal NPS Pollution Control and others will continue to govern BMP implementation.
(2) By 2001, distribute the BMP handbook for developing areas to all new municipalities in Pennsylvania. Provide funding for training to all municipalities by 2001, and put the handbook on the web by 2001.
(3) By 2002, provide statewide interagency training on the Stream Corridor Restoration handbook.

Progress:
(1) BMP implementation is directed through these programs. Pennsylvania's Growing Greener Initiative has provided over $127 million in watershed grants since 1999 to help implement these programs.
(2) Completed. The BMP handbook was completed and distributed, and training was provided.
(3) **Completed.**

Goal J.

Implement Pennsylvania's 15-year program strategy for the Coastal NPS Pollution Control Program (CNPP).	Anticipated Output	Anticipated Completion Date	Status
	CNPP program implementation	By 2015	Ongoing
Objectives: (1) By January 2000, prepare and submit a 15-year Program Strategy that describes Pennsylvania's overall approach and schedule to ensure implementation of the 6217 management measures. (2) By January 2000, develop the first five-year implementation plan that details methods and programs to be used to achieve implementation of the management measures.			
Progress: **(1) Completed. The CNPP Strategy was submitted to and approved by NOAA and EPA.** (2) **The first five-year CNPP Implementation Plan has been initiated.**			

The final major Goal in Pennsylvania's NPS Management Program-1999 Update (Section I, pages 11-12) is the Watershed Support Initiative.

Watershed Support Initiative Goal

Increase by ten (10) the number of watershed groups implementing protection and restoration of their watershed.	Anticipated Output	Anticipated Completion Date	Status
	Watershed groups established	By 2004	Ongoing
Progress: **Completed. Approximately 136 watershed organizations were organized in Pa. from 1999 to 2003, with more having been organized since 2003.**			

SECTION II. Major Initiatives

Major efforts that support Nonpoint Source (NPS) watershed protection and restoration in Pennsylvania are summarized in this Section. The focus is on the current status of these efforts. Many private and public initiatives on the local, state, and federal levels work together to address NPS pollution problems statewide.

Update to Pennsylvania's NPS Management Program

This is one of Pennsylvania's major NPS program activities. Started at the October 2003 NPS Liaison Work Group meeting, the process will involve statewide stakeholder input starting with small work group meetings in early 2004. Pennsylvania's goal is to complete the NPS Management Program Update and submit it for the Environmental Protection Agency's approval in 2005.

Table 2. NPS Management Program Update Schedule

Target Dates	Goal
2004	
June - August	NPS work groups refine draft Objectives/Action Items.
September	Revised drafts completed.
October	NPS Liaison work group comments on 2004 NPS Update.
2005	
January-April	Circulate revised draft NPS Update through Pa DEP.
May-June	Pa Bulletin notice, 45-day public comment period, Update article for public comment.
June	Submit 2004 NPS Management Program Update to EPA for approval.

Pennsylvania's NPS (Section 319) Program Watershed Planning Initiative

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Watershed-based implementation planning became a major emphasis in the Section 319 program in 2003-2004. Pennsylvania initiated this program to integrate its stream and lake restoration efforts more closely with the Total Maximum Daily Load (TMDL) program. Development of an implementation plan is also a necessary prerequisite to using Section 319 incremental funds for construction in all of our restoration projects.

Required planning elements from the EPA Section 319 Grant Guidance were communicated to watershed partners throughout the state, particularly in those areas where restoration projects were scheduled for implementation during the fiscal year. Ten watersheds having approved TMDLs were initially awarded Section 319 funds to develop watershed-based implementation plans in 2004 (see **Figure 1**). **Table** 3 locates these Phase 1 watersheds by DEP Region and identifies the principal type of impairment found in each. **Table** 4 shows the status of Pennsylvania's watershed-based implementation planning efforts as of December 28, 2004.

Figure 1. Phase I Implementation Planning Watersheds

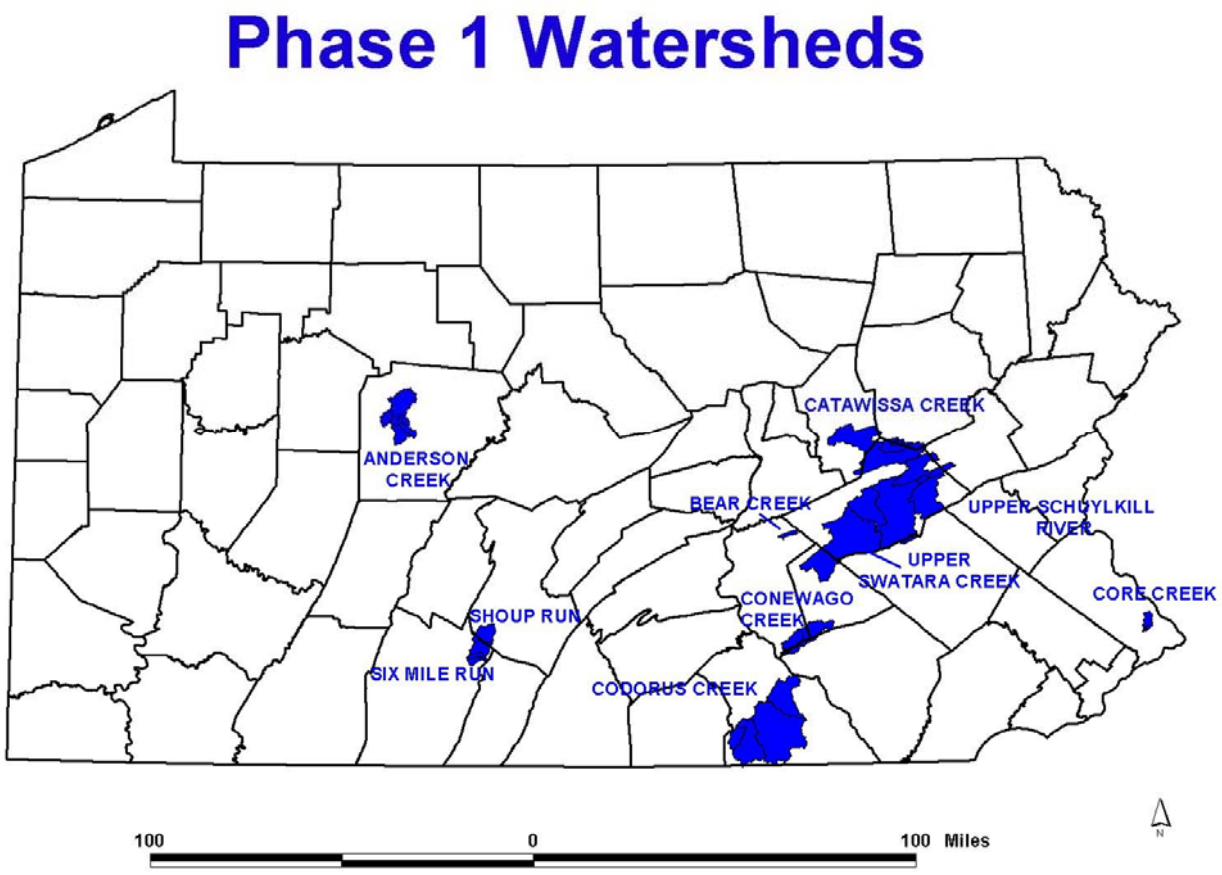

Table 3. Watershed-Based Implementation Plans Being Developed During FY2004

Area of State	**Watershed(s)**	**NPS Problem**
Northeast	(1) Upper Schuylkill River	AMD
	Schuylkill River/Mill Creek	
	L. Schuylkill River/Wabash Creek	
	W. Branch Schuylkill/Muddy Branch	
	(2) Upper Swatara Creek	AMD
Northcentral	(3)Anderson Creek/Kratzer/Irvin/Little Anderson Creek	AMD
	(4) Catawissa Creek/Tomhickon/Sugarloaf Creek	AMD
Southeast	(5) Core Creek/Lake Luxembourg	Non-AMD
Southcentral	(6) Bear Creek	AMD
	(7) Codorus Creek	Non-AMD
	Codorus Creek/Oil Creek	
	East Branch Codorus Creek	
	South Branch Codorus Creek	
	(8) Conewago Creek A & B	Non-AMD
	(9) Shoup Run	AMD
	(10) Six Mile Run/ Sandy Run/Long's Run	AMD

Table 4. Status of Pennsylvania's Watershed-Based Implementation Plans, As Of 12/28/2004

	Organization & Public Awareness	Funding for Assessment	Assessment & Prioritization	Review & Public Participation	Additional Data Gathering	Implementation Planning Proposal	DEP Planning Grant Award	BMP Options & Selection	BMP Modeling & Cost Estimates	Project & Water Quality Milestones	Draft Plan	Review & Public Participation	Final Plan
Catawissa/Tomhickon/Sugarloaf Creek	√	√	√	√	√	**N/A**	**N/A**	√		√	√	√	√
Shoup Run	√	√	√	√	√	√	√	√		√	√	√	√
Six Mile/Sandy/Long's Run	√	√	√	√	√	**N/A**	**N/A**	√		√	√	√	√
Lake Luxembourg/Core Creek	√	√	√	√	√	√	√	√		√	√		
Schuylkill/Mill Creek	√	√	√	√	√	√	√	√		√	√		
L. Schuylkill/Panther/Wabash Creek	√	√	√	√	√	√	√	√		√	√		
W. Branch Schuylkill/Muddy Branch	√	√	√	√	√	√	√	√		√	√		
Upper Swatara Creek	√	√	√	√	√	√	√	√		√	√		
Codorus/Oil Creek	√	√	√	√	√	√	√	√		√	√		
East Branch Codorus Creek	√	√	√	√	√	√	√	√		√	√		
South Branch Codorus Creek	√	√	√	√	√	√	√	√		√	√		
Bear Creek	√	√	√	√	√	√	√	√					
Anderson/Kratzer/Irvin/L. Anderson Ck.	√	√				√	√						
Conewago Creek A & B	√	√				**N/A**	**N/A**						

Growing Greener Initiative Success Continues in 2004-2005

Since 1999, Growing Greener has supplied $156 million in grants for more than 1,400 projects in all 67 counties of Pennsylvania. The grants are used to create or restore wetlands, restore stream buffer zones, eliminate causes of nonpoint source pollution, plug oil and gas wells, reclaim abandoned mine lands, and restore aquatic life to streams that were lifeless due to acid mine drainage.

For the seventh grant round, the Pa. Department of Environmental Protection (DEP) will invest in projects that seek to address nonpoint source pollution, such as abandoned mine drainage, urban and agricultural runoff, atmospheric deposition, on-lot sewage systems and earth-moving activities.

Eligible projects could include reducing nonpoint source pollution in watersheds where streams are impaired; designing practices and activities that support water quality trading initiatives; integrating stormwater management and flood protection into watershed management; encouraging the beneficial use of abandoned mine pool water; and integrating air deposition controls and management with mitigating water quality problems.

In 2004, the Pa. DEP announced a total of $24.3 million in Growing Greener grants: $5.5 million watershed grants; $3.9 million to support watershed specialists in county conservation districts and $5 million for the Conservation Reserve Enhancement Program. About $4.4 million (10 percent minimum) is reserved to fund innovative sewer and water projects.

About $15.8 million will be allocated from Growing Greener funding by DEP for its own mine reclamation and well plugging projects and for the Administration's plan to accelerate the payback of previous Growing Greener grants. A portion of the Energy Harvest Program grants also came from the Round Six Growing Greener allocation.

For FY 2004-2005, the Pa. DEP earmarked the $34.6 million in Growing Greener funding for these purposes: $21.232 million for Watershed Protection and Remediation; $2.1 million for Oil and Gas Well Plugging; $ 6.9 million Abandoned Mine Reclamation and Remediation; and $4.465 million for Sewage and Drinking Water Grants.

Funding for the Growing Greener Program continues to be provided from the $4 per ton tipping fee on municipal waste. It provides a funding source through 2012.

The Pa. DEP received nearly 450 applications for watershed restoration and protection projects in Round Six. The DEP announced in December 2004 it will accept applications for watershed restoration and protection grants for the seventh year of Growing Greener. The deadline to apply is March 4, 2005. Visit the Pa. DEP Grants Center, www.dep.stata.pa.us DEP Keyword: Growing Greener, for more information and to see what projects have been funded in prior grant rounds.

State Surface Water Assessment Program

This information is taken directly from the 2004 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, which includes the federal Clean Water Act's Section 305(b) Report and 303(d) list.

Streams Water Quality Assessment - Aquatic Life Use Support

A summary of aquatic life use support (ALUS) is presented in Table 6. The table includes stream miles supporting designated fish and aquatic life uses, miles reported as impaired and miles remaining to be assessed. A listing of the sources and causes of observed impairment on a statewide basis is presented in Table 6. The sources and causes in Table 6 will not equal the miles impaired because more than one source and/or cause can be listed in an assessment. In addition, it should be noted that the miles reported as assessed for each use will not equal the miles assessed throughout the Commonwealth because some segments were assessed for more than one use.

A total of 67,979 miles of stream assessments for ALUS conducted through September 2003 are included in this report. A total of 15,182 stream miles remain to be assessed in order to achieve comprehensive coverage, based on the current GIS coverage.

Table 5.
Aquatic Life Use Support – Streams

Category	Miles
Total Miles	83,161
Total Supporting	57,217
Total Impaired	10,762
Scheduled for Assessment	15,182

Recent monitoring information indicates that 57,217 miles (84 percent of the assessed miles) support the designated fish and aquatic life use. A total of 10,762 miles are reported as impaired (16 percent). The three largest sources of reported impairment are abandoned mine drainage, with 4,036 miles reported as impaired, agriculture, with 3,876 miles of reported impairment and urban runoff/storm sewers with 1,753 miles reported as impaired (Table 6).

The major causes of reported impairment on a statewide basis are siltation, metals, nutrients and pH. While direct source/cause linkages cannot be made at the level of detail presented in Table 6, these causes are known to be associated with the sources noted above and have been cited in previous 305(b) reports. Agricultural impairments are due to nutrients and siltation associated with surface runoff, groundwater input and unrestricted access of livestock to streams. Low pH and elevated concentrations of heavy metals are the result of acid mine drainage and runoff from mine lands and refuse piles also contribute sediment. Increased levels of nutrients and siltation, along with flow variability, are associated with urban runoff.

The source/cause linkage is found in the individual records in the assessment database. This information is used to develop the five-part characterization of use attainment status and help prioritize remediation efforts.

Table 6.
Sources and Causes of Impairment
Aquatic Life Use Support – Streams

Source of Impairment	Miles	Cause of Impairment	Miles
Abandoned Mine Drainage	4,036	Siltation	5,604
Agriculture	3,876	Metals	3,904
Urban Runoff/Storm Sewers	1,753	Nutrients	2,347
Road Runoff	624	pH	2,226
Small Residential Runoff	615	Organic Enrichment/Low DO	1,251
Habitat Modification	554	Water/Flow Variability	1,070
Municipal Point Source	451	Other Habitat Alterations	778
Other	314	Cause Unknown	733
Atmospheric Deposition	308	Flow Alterations	664
Removal of Vegetation	301	Suspended Solids	529
Source Unknown	238	Other Inorganics	268
Channelization	233	Turbidity	226
Industrial Point Source	220	Salinity/TDS/Chlorides	155
Construction	183	Excessive Algal Growth	98
Land Development	141	Thermal Modifications	81
On-Site Wastewater	139	Priority Organics	50
Upstream Impoundment	130	Nonpriority Organics	50
Erosion from Derelict Land	125	Unknown Toxicity	49
Natural Sources	123	Un-ionized Ammonia	44
Combined Sewer Overflow	109	DO/BOD	40
Bank Modifications	90	Oil and Grease	39
Hydromodification	86	Pesticides	25
Surface Mining	71	Color	11
Flow Regulation/Modification	51	Chlorine	6
Subsurface Mining	41	Taste and Odor	5
Golf Courses	37	Filling and Dredging	4
Package Plants	16	Noxious Aquatic Plants	3
Silviculture	14		
Draining or Filling	12		
Land Disposal	12		
Petroleum Activities	7		
Highway, Road, Bridge Const.	4		
Recreation and Tourism	2		
Logging Roads	2		
Dredging	1		

SECTION III. Challenges / Accomplishments

AGRICULTURE Challenges and Accomplishments

CHALLENGES

- Technical Service Provider funding at local level.
- Conservation planning.
- Pennsylvania DEP Energy Harvest Grant Program funding to meet demand.
- Nutrient Trading & Conestoga River Pilot Program success.
- Technology-transfer opportunities from other industry to apply to agriculture.
- Measuring results by modeling and water quality monitoring.
- Chesapeake Bay Program (CBP) Tributary Strategy implementation locally.
- Air quality impacts, e.g., ammonia deposition, on water quality.

ACCOMPLISHMENTS

Milestone A. Half of all Concentrated Animal Operations (CAOs) have nutrient management plans by 2004.

The revised Nutrient Management Act (NMA) (Act 6 of 1993) regulations are moving forward. All identified CAOs have plans. There are 846 CAOs with approved plans; annual inspections are now done on each of these farms to ensure compliance with the approved plan. There are 1,195 volunteer approved plans as of June 2004. Pa's Nutrient Management Act (NMA), also known as Act 6 of 1993, financial incentive programs have proven successful.

Milestone B. Assess discharge potential from existing manure storage facilities on existing Confined Animal Feeding Operations (CAFOs) by 2004.

This goal was completed as a part of Pennsylvania's CAFO Strategy development. New CAFO regulations are being finalized. Approximately 300 additional agricultural operations may fall under CAFO permitting requirements.

Milestone C. Best management practice (BMP) installation to reduce nutrient impacts on surface and groundwater by 2015.

Many agricultural assistance programs help producers statewide to implement BMPs. The Section 319 NPS Implementation program requires sediment and nutrient load reduction estimates for projects in the FFY2002 and more recent grants.

Milestone D. Implement conservation plans on farms in Pennsylvania. Increase the number of conservation plans annually through 2004.

This goal is being accomplished as USDA-NRCS and conservation district staffing allows. Technical Service Provider funding will help fund conservation planning. No NRCS data has been provided on Pennsylvania's progress in meeting conservation planning efforts.

Milestone E. Implement 25 miles of riparian buffers annually to minimize nutrient and sediment impacts to streams.

This goal has been exceeded. Chesapeake Bay watershed efforts alone have helped Pennsylvania achieve this goal. Forested buffers within the Chesapeake Bay watershed have met and exceeded the goal. Over 604 miles of stream bank and shoreline were planted with riparian forest buffers in the Chesapeake Bay watershed, bringing the cumulative total to 2,869 miles restored since 1996.

The new goal announced at the 20th Anniversary Chesapeake Executive Council meeting is 10,000 miles of riparian forest buffers in the Chesapeake Bay watershed by 2010. Pennsylvania's share is 3,300 miles.

Milestone F. Increase Conservation Reserve Enhancement Program enrollment.

A $200 million expansion of the Pennsylvania Conservation Reserve Enhancement Program (CREP) will add 100,000 acres and 23 counties. This federal/state partnership to improve the quality of Pennsylvania's rivers and streams has prevented 1.1 million tons of sediment and reduced over 1 million pounds of nitrogen and phosphorus from entering the Bay.

Pennsylvania's Ohio River Basin CREP program added 16 counties and 65,000 acres of marginal and/or environmentally sensitive agricultural land in western Pa. It has an estimated total cost of approximately $145.6 million and an estimated federal commitment of $98.9 million. A Delaware River basin application is being prepared. 5,000 acres for CP-22, Riparian Buffers-Forested, was added to the original 20-county CREP area in South-central Pa.

Both the Pennsylvania Game Commission and the USDA-NRCS field staff provide technical assistance for the CREP.

Figure 2. Conservation Reserve Enhancement Program Regions

Milestone G. Install ten miles of stream bank fencing annually in pasture lands.

This goal has been achieved and exceeded.

Milestone H. Increase agricultural technician staff by 25 percent by 2004 to assist with BMP implementation.

This goal has been exceeded. Thirty-eight (38) Agricultural Conservation Technician (ACT) Technician/Engineer positions are funded statewide. CREP has ten field staff funded by the Pennsylvania Game Commission and employed by the NRCS to provide technical assistance for the CREP. Technical Service Providers (TSP) and the new certified conservation planners (NRCS) also assist with BMP implementation.

Milestone I. Conduct education/outreach activities to promote composting and other safe methods for livestock and poultry disposal.

The Pennsylvania State University Cooperative Extension and Pa. Association for Sustainable Agriculture provide training sessions and educational programs for agricultural producers. Wenger Feeds provides education & outreach activities on an informal basis for contracted poultry and swine producers.

Several extension educators around the state provide mortality composting information to producers as needed by farm visits, phone conversations, newsletter information, and participation in field days and pasture walks.

In 2003, a Penn State poultry extension specialist presented the "Economics and Management of Composting and Incineration" at the Pennsylvania Game Breeders and Hunting Preserves Annual Meeting, reaching approximately 130 participants. Additionally, dead bird composting was included in presentations to Pennsylvania Nutrient Management Planners at their 2004 annual meeting, reaching over 120 planners and government agency professionals.

A training session sponsored by Penn State Cooperative Extension was held in May 2004 for Pennsylvania Department of Agriculture veterinarians and others. The primary goal of the training was to coordinate mortality management information and outreach efforts. Following the training, each Pennsylvania Department of Agriculture Regional Office received the latest composting information, CD's and educational materials for local producers. Additionally, Penn State Cooperative Extension educators spoke at several Tioga County pasture walks and statewide workshops for producers and agricultural industry professionals.

Milestone J. Provide sufficient funding for conservation district programs and develop new revenue sources.

Pa.'s Growing Greener Initiative provides funding for 64 conservation district watershed specialists (CDWS), and one City of Philadelphia Water Department employee, covering 65 of 67 counties in the state. Pa.'s 2004-2005 budget provided $3.1 million for the CDWS program. The Nutrient Management Program budget increased from $1.6 to $2.1 million. Pa.'s 2004-2005 budget includes a $900,000.00 increase for conservation district staff in the Erosion & Sediment Pollution Control program (E&SPC) and for agricultural technical assistance.

Milestone K. Develop and implement new funding for addressing agricultural NPS problems.

The Ohio River basin addition to the CREP program is a new funding stream.

Many 2002 Farm Bill programs have been implemented and are providing additional sources of funding for Pa. agricultural conservation programs. The Conservation Security Program (CSP) provided funding for two watersheds in Pa. in 2004-2005; the Schuylkill River Action Network (SAN) and the lower Susquehanna River basin (Swatara Creek and Conodoguinet Creek basins) are now eligible for CSP funds. The 2003-2004 CSP round provided funding for 30-40 contracts in the Raystown Branch of the Juniata River watershed. CSP basins are 8-digit USGS HUC watersheds. The entire country is expected to be

eligible for CSP funding in eight years. Environmental Quality Incentive Program (EQIP) funds increased substantially in FFY2003 and FFY2004.

The Nutrient Management Plan Implementation Grant Program, Agriculture Linked Investment Program (AgriLINK), Plan Development Incentives Program (PDIP), and state Growing Greener Initiative provide funding. The Pennsylvania Nutrient Management Program website at http://panutrientmgmt.cas.psu.edu provides important current information on funding sources.

Milestone L. Increase education, outreach, and technology transfer opportunities.

New publications developed to support Pennsylvania's Nutrient Management Program include,

- Pa. Farm-A-Syst Farm Evaluation Program - Worksheet #11 **Soil Conservation Management** published and distributed in October 2003.
- Pa.'s Nutrient Management Program Newsletter is published several times per year. It is available at http://panutrientmgmt.cas.psu.edu .

New Penn State Extension Publications include,

- **Dodd, A., C. Abdalla, and J. Becker.** Make Your Voice Heard: Commenting on Proposed Water Pollution Regulations for CAFOs and
- Other Agricultural Operations. **Penn State Cooperative Extension, University Park, PA.**

- **Dodd, A., C. Abdalla, and D. Beegle.** Changing PA Nutrient Management Act Regulations: A Guide to the Proposed Changes and
- Public Comment Process. **Penn State Cooperative Extension, University Park, PA.**

- **Abdalla, C. and A. Dodd.** Choosing an NRCS Technical Service Provider. **Penn State Cooperative Extension, University Park, PA.**

- **Beegle, D., A. Dodd, and C. Abdalla.** Interim Phosphorus Management Policy for Nutrient Management Plans in Pennsylvania – May 2004. **Penn State Cooperative Extension, University Park, PA.**

Penn State Cooperative Extension sponsored seven (7) **Dairy and Livestock Nutrient Environmental Education Days (NEEDs) workshops** throughout the state, reaching over 130 government agency conservation professionals and others. The main objective of this program was to provide participants with an understanding of the links among community concerns, agricultural air and water quality impacts, changing federal and state policy, and farm-level environmental risk management tools. The comprehensive program focused on four (4) themes to define these linkages: odor management, P management, environmental stewardship, and changing regulations to protect water resources.

Pennsylvania Nutrient Management program information is available to the public on the Pennsylvania State University, College of Agricultural Sciences, website at http://panutrientmgmt.cas.psu.edu/**.**

RESOURCE EXTRACTION Challenges and Accomplishments

CHALLENGES

- Complete watershed plans for abandoned mine reclamation (AMR) and abandoned mine lands (AML) restoration projects.
- Work with local watershed organizations and associations to develop watershed restoration plans. Many have expressed concerns about whether plans are approved by any of the major state or federal programs.
- Develop an AMD passive treatment system database.
- Use GIS to identify abandoned mine land sites (AML) and projects completed through ReClaim Pa, BAMR Title 4 SMCRA.
- Abandoned Mine Reclamation Plan - DEP BMR/BAMR – more standardization for AMD issues is needed.
- Need for continuing monitoring at passive treatment sites to evaluate treatment system effectiveness. A standardized form and standard tests for monitoring of passive treatment systems should be developed.
- Better technology transfer on passive AMD treatment systems.

ACCOMPLISHMENTS

Milestone A. New watershed plans that incorporate prevention and remediation of pollution from resource extraction activities.

Plans started and either completed or close to completion:

- Catawissa Creek, Schuylkill County
- Cold Stream, Centre County
- Shoup Run, Huntingdon County
- Longs Run, Six Mile Run, Sandy Run, Bedford County

Restoration plans or additions to plans to comply with EPA criteria for incremental 319 funding begun in 2004:

- Wabash Creek, Little Schuylkill River, Schuylkill County
- Main stem Schuylkill River, West Branch Schuylkill River, Muddy Run, Mill Creek, Schuylkill County
- Anderson Creek, Clearfield County
- Bear Creek, tributary to Wiconisco Creek, Dauphin County
- Redbank Creek, Jefferson County
- Bear Creek, Butler County

Restoration plans funded in 2004 or planned to begin in 2005:

- Montgomery Run, Clearfield County
- Little Laurel Run, tributary to Clearfield Creek, Cambria County
- Pine Run, tributary to Redbank Creek, Jefferson County
- Blacks Creek, Butler County
- Hubler Run, Clearfield County
- Johnson Creek, Tioga County

Other planning activities:

- Mill Creek, Clarion River Watershed, Clarion County, OM&R Plan-Comprehensive restoration plan for 21 systems
- Soldier Run, tributary to Sandy Lick Creek, Jefferson County
- Caylor Run, Jefferson County
- Licking Creek, (Knox, Washington & Farmington Townships) Clarion County

- Licking Creek becomes Paint Creek below the confluence of Licking Creek and Mahl Run. Paint Creek becomes Deer Creek near Shippenville. Deer Creek Flows to the Clarion River below the Piney Dam. Note: Licking Creek, Paint Creek and Deer Creek are names of sections of the same stream, not names of different tributaries or streams.

The DEP District Mining offices and consultants continue to develop TMDLs for streams impaired by abandoned mine drainage and on the 303d list. See section on TMDLs for a list of watersheds with TMDLs under development.

Milestone B. Continue monitoring passive treatment systems after construction.

High water levels from near record rainfall in 2004 and scouring by the remnants of hurricanes and tropical storms hampered sampling of passive treatment sites and instream conditions. Fewer species and lower numbers of fish were captured at sites regularly sampled by USGS.

Swatara Creek

- The NMP on Swatara Creek has been extended through 2007 to continue to document results of treatment systems. Fish and macroinvertebrates are sampled in October; water chemistry sampling is conducted year-round. Sampling of the Swatara Creek watershed by the USGS, funded through the 319 National Monitoring program (NMP), had documented improvements in both water quality and the number of fish species in Swatara Creek at Ravine, the downstream end of the coal mined area after installation of passive treatment systems and land reclamation up until 2003. In 2003 and 2004, reduced species and numbers of fish were encountered during electrofishing. The lower fish numbers are believed to have been caused by the high flow and scouring by tropical storms.

Upper Schuylkill River

- Sampling and monitoring of 319 funded projects at the Otto discharge on Muddy Run in the upper Schuylkill River watershed continued in the pre-construction phase. Fish and macroinvertebrates were sampled in October; water chemistry sampling was conducted quarterly, year-round by USGS.
- The Bell Colliery treatment system was constructed in 2003; sampling continued in 2004 to evaluate system components and for comparison of upstream and downstream water quality. Fish and macroinvertebrates were sampled in October; water chemistry sampling was conducted quarterly, year-round by USGS. The grant terminated in September 2004.

Broad Top Coal Field

- Broad Top Township is monitoring the environmental results of the treatment systems installed in their township on Longs Run, Sandy Run and Six Mile Run. The Cambria District Mine Office of DEP has assisted them in their monitoring.
- Shoup Run Watershed Association and Cambria DMO continue monitoring of Shoup Run watershed to assess the results of treatment systems installed in the watershed.
- The Shoup Run, Six Mile Run, Longs Run, and Sandy Run watersheds were evaluated under the unassessed waters program by biologists from SRBC and DEP Bureau of Mining and Reclamation as part of the assessment of the State Water Plan subbasin 11D (lower Raystown Branch watershed). This evaluation will refine the length and numbers of stream segments listed on the 303d list of impaired waters from impairment by abandoned mine drainage. The entire subbasin had not previously been formally assessed. Some stream segments will likely be removed from the 303d list and other segments will likely be added. Results of the assessment will be made public in early 2005.

Catawissa Creek

- The Oneida #1 AMD Oxic Limestone Drains Treatment System has been regularly monitored since construction was completed in August of 2001. In 2004, the treatment system had structural problems at the intake due to high rainfall and blockage by leaves. The system was no longer working properly and was discharging acidic water into Sugarloaf Creek. The gravity-drained mine tunnel is a major contributor of mine drainage to the Upper Tomhicken Creek watershed. The Catawissa Creek Restoration Association has been considering how to fix the problems.

- Monitoring in the Catawissa Creek watershed was increased in 2004 as pre-construction for the Audenreid Tunnel passive treatment system. Macroinvertebrates were sampled by SRBC in early June and late October. Scouring of the substrate and high water levels were noted during the October sampling. Water levels were too high downstream of the Tomhicken Creek to allow macroinvertebrate sampling. Water chemistry sampling is conducted year-round by the DEP-BAMR Wilkes Barre Office and field tested by the Catawissa Creek Restoration Association. Additional sites farther downstream will be sampled by SRBC in conjunction with their macroinvertebrate sampling.

Milestone C. Implementation of restoration of plans to abate pollution from resource extraction activities.

Implementation of the Little Schuylkill and Upper Schuylkill River AMD problems funded by the 319 Program continues. Construction of passive treatment systems for the Pine Forest discharge into Mill Creek in the Upper Schuylkill River watershed and treatment of the Reevesdale South Dip Tunnel in the Little Schuylkill River basin were funded by the 319 Program in FY2004.

The Bell Colliery Acid Mine Drainage Treatment System was dedicated in September 2004. In 2002, the Schuylkill Conservation District received a $275,000 grant from the Pennsylvania Department of Environmental Protection, Section 319 (h) program, to construct a treatment system to improve the quality of the water exiting the Bell Colliery discharge to the Schuylkill River. In early 2004, the District finished the construction of a treatment system that is removing the orange tinge from the mine discharge and making the water safe for fish again. The water from the discharge flows through two limestone drains and into settling ponds where iron and aluminum precipitates before the water is returned to the Schuylkill River. With the new treatment, water monitoring indicates the pH level rising to above 5.5 and the fish population slowing increasing.

Design specifications for passive treatment of the Audenreid Tunnel discharge, identified as the largest discharge in the Catawissa Creek watershed plan were completed in December 2004. Construction is scheduled to begin in spring 2005. Successful treatment of this discharge will help restore over 30 miles of the largely forested Catawissa Creek currently degraded by acid and elevated aluminum concentrations.

Implementation continues in several other watersheds with restoration plans, including Longs Run in Broad Top Township, Bedford County, Coal Pit Run, Cambria County, Blacklick Creek in Indiana and Cambria Counties, Emigh Run, Clearfield County, Bear Creek in Dauphin County, Indian Creek in Fayette County and Raccoon Creek in Allegheny, Beaver, and Washington Counties, and Little Toby Creek in Elk County. Funding for these projects was provided through the DEP Growing Greener, 319 and OSM Appalachian Clean Streams Initiative programs.

Milestone D. Develop innovative technology or refine existing technology to prevent or treat degradation from resource extraction activities.

Hedin Environmental continues to pursue new avenues for the iron sludge that accumulates in passive treatment systems. Hedin formed a new company, Iron Oxide Recovery, Inc., focusing on the pollutants extracted from mine drainage during the treatment process. Hedin is particularly interested in iron oxide, the chemical that gives Pennsylvania's mine polluted streams and rivers a distinctive rusty orange color. Recovery and use of iron oxide represents a change in viewpoint, where waste product produced in passive treatment systems is considered a resource instead of a disposal problem. The goal is to help allow treatment systems to pay for themselves and eventually provide waste free treatment. Iron oxide is used as pigment in a number of products, including paint.

Plan to market recovered iron pigment from area streams has shown potential. Early samples measuring the amount of recoverable iron pigment in local acid mine drainage discharges are yielding good results. Robert Hughes, regional coordinator for EPCAMR, said the orange-colored sludge that accumulates in acid mine drainage discharges could contain levels of iron oxide that are high enough to be marketed.

Milestone E. Promote innovative policies and procedures to prevent degradation from future resource extraction activities.

The Shannopin Mine, which threatened Dunkard Creek in Greene County, is a prime example of an orphan mine discharge that threatens stream water quality. The mine was closed over ten years ago due to filling with water; the mine continues to fill and will break out to the surface in a few years. The rising water also threatened the Dana Mining Co. deep mine, located on the coal seam above the Shannopin Mine. A treatment plant to receive the mine water, prevent breakout of the mine pool was constructed in 2004. The treatment plant will provide treated water from the mine to be used as cooling water at a proposed 600 megawatt coal fired power plant one mile south of the Pennsylvania border in Monongalia County, West Virginia.

Schuylkill Action Network (SAN), Acid Mine Drainage Workgroup

The Schuylkill Action Network (SAN) was formed in spring 2003 to focus on drinking water quality issues of the Schuylkill River Watershed, which covers parts of 11 counties in southeastern Pennsylvania. The Schuylkill River has 52 drinking water intakes, provides water for thermoelectric generation, and offers fishing and recreational opportunities.

The purpose of the SAN is to improve the water resources of the Schuylkill River watershed by working in partnership with state agencies, local watershed organizations, water suppliers, local governments, and the Federal government to transcend regulatory and jurisdictional boundaries in the implementation of protection measures**."**

Description, Goals and Participants

The Acid Mine Drainage (AMD) Workgroup is working to characterize and minimize flow from the abandoned Pine Knot drainage tunnel, whose discharge is the largest contributor of metals from AMD. Once the sources of inflow are identified, the workgroup will prioritize the sources and implement remedial actions.

Members of the AMD workgroup include Environmental Protection Agency Region III, Pennsylvania Department of Environmental Protection Bureau of Abandoned Mine Reclamation, Bureau of Watershed Management, and Pottsville District Mine Office, Philadelphia Water Department, Schuylkill Headwaters Association, Schuylkill County Conservation District, Army Corps of Engineers, US Geological Survey, PECO Exelon, Reading Anthracite, and the Eastern PA Coalition for Abandoned Mine Reclamation

The workgroup meets regularly to discuss treatment options in the watershed. The workgroup is moving forward on several fronts for remediating the Pine Knot Tunnel discharge. Discussions at meetings included monitoring protocol for providing measures of success and for coordinating with other SAN workgroups; analyzing field survey results to identify strip pits recommended for filling and streams suggested for daylighting (bringing to the surface); and grant applications and funding sources for monitoring and remediation activity. Follow-up actions included prioritization of projects for funding under the Targeted Watershed Initiative Grant, the scoping out of assessment needs and possible applications for Brownfields funding, and discussions with Exelon regarding possible AMD mitigation sites. Additional information about the Schuylkill Action Network may be found on the SAN website at www.schuylkillactionnetwork.org.

Current Projects and Accomplishments for 2004

Upon review of land use information, topographic maps, old mine reports to determine elevation and location of barrier pillars, etc., the Workgroup estimated that the surface area above the Pine Knot tunnel discharge drains to the Oak Hill Borehole and that approximately 15 square miles of the valley drains out of the Pine Knot tunnel. The data collected in the estimation of the drainage area was digitized to GIS, analyzed, and overlayed on maps that were used to conduct a reconnaissance survey of 40 stream locations

to gather water quality data to identify principle contributors to the Pine Knot stream discharge, i.e. infiltration of precipitation, seepage from stream channels, groundwater discharges, and open pits.

Milestone G. Funding sources.

In this time of budgetary crunches on both the federal and state levels, the news was not good in 2004 for funding of projects to remediate damage from abandoned mining. The Office of Surface Mining's (OSM) Application Clean Stream Initiative has a program called the Watershed Cooperative Agreement Program (WCAP) provides supplemental funding for construction of acid mine drainage (AMD) reclamation projects in Appalachian states. This is a relatively small federal program that provided a much needed boast in funding projects. In Pennsylvania, WCAP has provided over $4.9 million in assistance for 51 projects; the usual funding award is $100,000 per project. In the entire Appalachian region, 96 awards to 44 watershed groups totaling $8.6 million were made since the beginning of this program in 1988. This funding often makes the difference in whether a project is built or not. The program also delivers technical assistance to watershed groups.

Title IV of SMCRA was also in jeopardy since reauthorization was not yet secured as of the end of December 2004. The program was still alive and moving through Congress through a continuing resolution that kept the federal government going through December 3rd, 2004. It was also included in a $388 billion omnibus appropriations bill that will keep it in place through June 30, 2005. New legislation was expected to be introduced into Congress in 2005 that will hopefully keep adequate funding coming for a long enough time to address our most pressing health, safety, and reclamation problems. The program was also expected to have to support those in Congress who will be championing the cause of the states that are facing the greatest reclamation needs. This program is vital issue for Pennsylvania, the most impacted of all states by over a hundred years of unregulated coal mining.

On the state level, the Pennsylvania General Assembly recessed for the year without acting to pass the package of legislative proposals that would have placed an $800 million bond on the spring 2004 ballot, a measure called Growing Greener II. However, the “Green Ribbon Commission” created by Senate and House Republican legislative leaders has met twice to study conservation needs and potential funding sources. It is hoped that this commission will spur action once the General Assembly reconvenes in 2005.

The Growing Greener program provided only 5.5 million for restoration projects in 2004, much less funding compared to other years. The orphan oil and gas well plugging fund and the abandoned well plugging program provided $2.6 million. The funding devoted to resource extraction problems was expected to provide for plugging of 344 wells and reclamation of 250 acres of abandoned mine lands.

Funding through the Clean Water Act, Section 319 was reduced in FFY 2005. Pennsylvania’s allotment was reduced by $876,000. A total of $3.7 million was originally pledged for 319 projects for FFY 2005. Just over $2 million of the final funding amount funding is to be used for passive treatment of AMD discharges.

The good news is that on July 21, 2004, EPA announced that the Philadelphia Water Department and the Partnership for the Delaware Estuary were selected from a national competition of 115 nominees, to receive a $1.15 million grant for project work in the Schuylkill River Watershed. The grant will support the continuing efforts of the Schuylkill Action Network (SAN) by funding projects addressing high priority water quality issues in the watershed and protecting the river and its tributaries as a source of drinking water. $400,000 of the grant is to be used for AMD remediation.

Also in the upper Schuylkill River basin, as part of an agreement between Exelon Generation Company, LLC. (Exelon) and Delaware River Basin Commission (DRBC), Exelon is required to develop a prioritized list of acid mine drainage (AMD) sites in the Schuylkill River Basin and select one or more sites for mitigation during the later half of 2004 through 2005, as a means to use the $100,000 pledged for AMD problems in the watershed.

A new funding source for monitoring of passive treatment was received through the Growing Greener program. WPCAMR will be the project sponsor for a $100,000 grant to provide watershed associations or other parties responsible for operation and maintenance of passive treatment systems with funding for water sample analysis to guide O&M needs and to assess the results of the systems.

Milestone I. Public awareness activities on non-point source pollution from resource extraction and effects of remediation activities.

The sixth annual conference on abandoned mine drainage and reclamation was held at the Indiana University of Pennsylvania in Indiana, Pennsylvania on June 9-12 June 2004. The theme for the 6th annual conference was "**Alphabet Soup of AMR**." The conference brought together watershed associations, environmental organizations, consulting firms, government agencies, and other partners in abandoned mine reclamation to share new technologies and ideas and to form new partnerships. The four-day conference featured a two-day technical session followed by a two-day watershed session. The technical session featured speakers on new technologies for treating AMD. The watershed session provided opportunities for networking and hands-on learning. A daylong session on AMDTreat 3.0 software was presented by Brent Means of OSM. Participants learned how to use AMDTreat to determine what type and size treatment system could used for specific discharges.

The 2005 conference will be held in Pittsburgh Pennsylvania in August. The conference will be a joint effort of Pennsylvania and the US Office of Surface Mining to further promote technology transfer. The organizers hope to attract a national audience and nationally known speakers beyond the usual attendees from Pennsylvania.

Websites developed by EPCAMR & WPCAMR have been enhanced and updated. The sites provide valuable information for the public on all aspects of abandoned mine drainage, sources of funding, solutions to AMD problems, treatment options, planning, and links to many other websites. The site addresses for WPCAMR is http://amrclearinghouse.org/. The EPCAMR website was changed to http://www.orangewaternetwork.org due to a problem with hackers in 2004.

WPCAMR continued to use their email subscription service called, "**Abandoned Mine Posts",** a free e-mail subscription service with information related to abandoned mine reclamation in Pennsylvania. Subscribers receive periodic articles and notices via e-mail that inform them about a variety of topics and current events related to abandoned mine drainage and reclamation. Topics of interest can be selected via a user profile to receive only editions related to those interests. Interest topics include:

- General AMD/AMR information - information on a variety of topics for those interested in abandoned mine drainage and abandoned mine reclamation.
- Ohio River Forums - an effort to establish an Ohio River Basin alliance to act as a voice for the region.
- Decision Maker Education - a WPCAMR initiative to educate mid level decision makers such as township supervisors, city councils, and business leaders about how AMD affects their communities.
- LTV / Bankruptcy - ongoing information concerning the bankruptcy of LTV Steel Co (and others) and the environmental and economic consequences faced by the Commonwealth of Pennsylvania.
- The AMR Trust Fund - an effort to obtain more money from the federal AMR Trust Fund for reclamation efforts and to encourage the passage of legislation to extend the period in which coal operators must contribute to the fund.
- WPCAMR Organization - information for those interested in organizational affairs.

The 12th Annual Monastery Run Project Symposium was held at St. Vincent College in Latrobe in November 2003. Presentations were made on efforts of DEP to address operation, maintenance, and replacement of AMD passive treatment systems and results of the college's chemistry department research into removal of aluminum from mine drainage. A tour of two local treatment projects was also available in

the afternoon. Posters were presented by several watershed associations on their activities on AMD treatment, history of women miners, and results of research into effects of mine drainage treatment on aquatic life.

A one-day resource recovery workshop was held in 2004 at the Johnstown Campus of the University of Pittsburgh.

Watershed Protection Institute The Center for Watershed Protection will host the Watershed Protection Institute (WPI), an intensive, interactive five-day program designed to train watershed leaders on practical watershed and site planning techniques. The training will be held March 28 - April 1, 2005 at the US Fish and Wildlife Service National Conservation Training Center Shepherdstown, WV.

CONSTRUCTION AND URBAN RUNOFF Challenges and Accomplishments

CHALLENGES

- Finalize Post Construction Stormwater Management BMP Manual and initiate training in 2005.
- Use of Act 167 Stormwater Management Planning to facilitate implementation of the MS4 permit requirements.
- Continue to promote a comprehensive watershed approach to stormwater management planning.

ACCOMPLISHMENTS

Milestone A.

- 2003 annual report completed.
- Conducted seven administrative and technical training sessions for conservation district staff. Conducted 22 program evaluations of delegated conservation district programs in 2003/2004.
- Continued to implement, revise and clarify NPDES construction and MS4 program guidance documents to reflect changes in the federal NPDES Phase II regulations.
- Clarified the post construction stormwater management requirements in the application for NPDES permits associated with construction activities

Milestone B.

- The Department, along with Cahill and Associates and members of the Stormwater Management Oversight Committee developed the initial draft of Pennsylvania's stormwater best management practices manual.

- Continue to conduct training for NPDES permit requirements, with special emphasis on post construction stormwater management.

Milestone C.

- NPDES permits for construction activities integrated regulated fill requirements. Site geology, past or present land use, or suspected soil contaminants need to be provided as a screening for potential contaminated runoff from the project site. In addition, the applicant must provide the requested data for the concerned geologic features, soil conditions or existing stormwater discharges.
- The applicant for NPDES permits associated with construction activities must perform environmental due diligence to determine if fill materials associated with the project qualify as clean fill.
- Continue to conduct training for NPDES permit requirements, with special emphasis on post construction stormwater management.
- Traditionally stormwater contributions and reductions were included in the nonpoint source component of TMDLs. Since NPDES permits are now required for MS4s and most construction activities, they are considered part of the point source contribution and reduction efforts.

Milestone E.

- Milestone completed prior to target date.

Milestone F.

- The Department continues to encourage municipalities to utilize the Act 167 process to help meet the MS4 permit requirements.

Statewide, 47 counties have completed 86 storm water management plans involving 797 municipalities. An additional 24 storm water management plans and updates are being prepared and reviewed. To date, more than $13 million have been appropriated by the legislature for the stormwater management grant assistance program. Municipalities and counties receive the funds as they submit invoices detailing completed work in preparing and updating the plans.

Stormwater runoff is one of the leading causes of water quality impairment in Pennsylvania, and proper stormwater management is publicly recognized as a priority need in most regions of the Commonwealth. However, the $1.2 million currently appropriated to the Pa. DEP to help municipalities address stormwater issues is no longer sufficient.

Secretary McGinty said that beginning next fiscal year, the appropriation will fall far short because of the number of plans already in the pipeline, those in the early stages of development and those federally mandated to be updated in the next five years. Annual deficits of at least $2.3 million are expected in fiscal years 2005-06 through 2008-09.

Milestone G.

- Municipal ordinances developed pursuant to Act 167 Stormwater Management Plans approved by the Department require that stormwater BMPs protect and maintain water quality.
- Continue to integrate post construction stormwater management planning into existing stormwater programs.
- NPDES Phase II municipal separate storm sewer system (MS4) permit, PAG-13, requires water quality design and pollution reduction.
- VUSP research and directed studies emphasize comprehensive watershed stormwater management planning, implementation and evaluation. Villanova's research facilities consist of a stormwater treatment wetland, a bio-infiltration traffic island, a large-scale porous concrete infiltration plaza and an infiltration trench. EPA has accepted these facilities as part of the National Monitoring Site program.
- EPA Region III, PADEP, and Philadelphia Water Department (PWD) have partnered together to form the Schuylkill Action Network (SAN) to reduce stream impairment through better stormwater management and to protect high quality streams from potential threats within the Schuylkill River Watershed. The SAN Storm Water Workgroup includes a subcommittee of land management, preservation, and conservation organizations given the critical role of land-use practices. Activities include education, outreach, and the implementation of best management practice (BMP) demonstration projects.

Milestone H.

- Continued to integrate the post construction stormwater management planning requirements into existing stormwater programs.

HYDROLOGIC MODIFICATION Challenges and Accomplishments

CHALLENGES / NEEDS

- Process to facilitate pre-project planning, peer review of projects and promote the transfer of technology.
- Team to evaluate the functionality/success of existing NSCD projects.
- Develop a cost range for assessing, design and construction of NSCD projects.
- Continue education in stream corridor management. Promote a general understanding of channel maintenance and its impact on channel function.
- Statewide uniform implementation of waterways restoration/watershed permit.
- Establish monitoring protocol for training volunteers, resulting in measurable environmental results.
- Maintain and promote the Keystone Stream Team (KST).
- Maintenance of existing projects.
- Alternative funding sources.
- Continue definition of regional characteristics related to sediment transport, regional curves, etc.

ACCOMPLISHMENTS

MILESTONE A: Work has continued on the existing watershed projects that consider the fluvial-geomorphology of the stream in addition to the remediation of the other non-point sources of pollution.

- All filed work completed for statewide regional curve effort. Statistical analysis of entire population has been completed. First draft of report, presenting all results is completed and in review. Field assessments for Ridge & Valley Province completed, regional curves and associated report are being drafted.
- Field assessments have been completed for about 20 stream gages for the Appalachian Province regional curve. Development of regional curves and report will commence in the near future.
- Report documenting Broad Run Watershed assessment is in preparation for regional review and Director's approval. Geomorphology-based watershed assessment completed for Broad Run Basin, including a macro invertebrate assessment and a water budget.

MILESTONE B:

- During 2004, another thirteen dams were modified or removed bringing the total of dams removed or modified to 69. The 13 dams removed opened an additional 100 miles of fish passage for a total 449 miles of stream habitat now open to migratory fish.

MILESTONE C: (Completed in 2001) By 2004, establish monitoring to document less downstream erosion and flood damage and more stable stream habitat after culvert/bridge replacement. By the year 2005, implement fish passage designs within all new culvert replacement structures that transport waterways with >100 acres of drainage area.

- During 2004 approximately two miles of culverted stream with hard bottoms have been reverted back to natural stream bottoms and fish passage.
- The Bureau of Waterways Engineering (BWE) has installed five (5) fish ways in dams along the Lehigh, Schuylkill, and West Branch Susquehanna Rivers to help reestablish the historic shad runs and other migratory fish.
- Three BWE flood protection projects began in 2004 with construction costs totaling approximately $5,000,000.
- Eight (8) projects to rehabilitate existing flood protection projects began in 2004 with construction costs totaling over $4,000,000.

MILESTONE D: By 2004, develop and implement procedures that will make possible the evaluation of aquatic habitat loss due to in-stream flow impacts resulting from surface water and groundwater withdrawals on a statewide basis.

- The U.S.G.S. is continuing the aquatic habitat assessments in Chester County.
- Report simulating the impacts of ground-water withdrawals on groundwater levels and streamflow in the French Creek has been published.

MILESTONE E: By 2004, increase by 25 percent the number of municipalities effectively implementing floodplain management over the 1999 baseline. Increase by 10 percent annually the number of "community assisted visits and contacts" to municipalities. Increase by 10 percent annually the number of people attending floodplain and storm water management training.

- Additional funding is needed to increase the conservation districts' (CD) "community assisted visits and contacts" to municipalities. The number of CD visits to municipalities has not increased over the 1999 baseline average of 35 to 50 municipal contacts per year.
- Small staff, turn over of municipal officials, and lack of sufficient funding have hampered efforts to increase outreach efforts in the Floodplain Management Program (FMP). In 2004, no FMP training sessions were held outside of the one Watershed Academy for Municipalities..

MILESTONE F: By 2001, establish a procedure to track the number of stream miles with new buffers and the number of miles of riparian buffers saved from destruction through the permit review process.

- Refer to Agricultural Milestones E & F. The goal has been met and exceeded. Establishing a tracking system for miles of stream buffers saved through the permit process is not feasible. The need to "avoid and minimize" is conveyed through education and outreach and therefore factored in prior to the permit process.

MILESTONE G: Annually increase by 100 acres the number of wetland acres protected, created or restored.

The goal has been met and exceeded. Refer to website www.dep.state.pa.us click on Subject, choose "wetlands."

MILESTONE H: (Completed and Evolving) The national Stream Corridor Restoration Handbook appended for Pennsylvania as a cooperative endeavor of all members of the NPS Hydromodification work group.

- The Keystone Stream Team has it's own website www.keystonestreamteam.org and Lycoming College's Clean Water Institute has a 319 grant to create a web-based database for NSCD data.
- Guidelines for Natural Stream Channel Design for Pennsylvania Waterways have been updated and are on the web.
- DEP watershed academies provide participants with an overview of the Natural Stream Channel Design (NSCD).
- The Conservation District Watershed Specialists annual meeting included a session on NSCD.
- Penn State University incorporates stream channel restoration in the curriculum of one Agricultural Engineering course and one Civil Engineering.
- Canaan Valley Institute provides scholarships to assist people in obtaining training in NSCD.
- Mike Lovegreen and the Bradford Conservation District offered two three-day hands-on training sessions for watershed specialists and others entitled: An Introduction to Natural Stream Channel Design.

SILVICULTURE Challenges and Accomplishments

CHALLENGES/NEEDS

Title III Watershed Forestry Assistance, established in the Healthy Forests Restoration Act of 2003, provides assistance to expand forest stewardship capacities and activities through forestry best management practices and other means to address watershed issues on nonfederal forested and potentially forested land. States can integrate forestry practices across mixed ownerships, provide cumulative water quality benefits, and offer low cost, long term solutions to many of the nation's nonpoint source pollution problems. Representatives of the USDA Forest Service, State forestry agencies, and USDA Cooperative State Research, Education and Extension Service, met on March 2-5, 2004 to begin drafting the Section 302 guideline. Proposed guidelines for each program will be published in the Federal Register for public comment in early 2005.

The State Watershed Forestry Assistance Program is authorized $15 million per year from FY 2004 through FY 2008. No appropriations have been received to date.

ACCOMPLISHMENTS

Milestone A. Provide ten workshops per year to communicate consistent information to loggers, landowners, and government officials on best management practices for silvicultural activities.

- In 2004, two hundred forty two individuals took Environmental Logging/Advanced Environmental Logging training. On continuing education courses, 507 individuals have taken training. Added to all the environmental Logging Training courses is a video on construction and proper use of portable timber bridges as well as instructions on the correct handling of hazardous spills.

- One new landowner group was established in 2004. This brings to 21 the number of forest landowner groups in Pennsylvania. These forest landowner associations conducted workshops and tours for addressing water quality issues as relating to logging and forest management.

- The Erosion and Sediment Control Plan for Timber harvesting Operation was revised and released in July, 2004.

- • The booklets, Controlling Erosion and Sediment From Timber Harvesting Operations (little green book) and Best Management Practices for Silvicultural Activities in Pennsylvania's Forested Wetlands, was combined into a field manual. A work group will be putting the finishing touches on the manual in late 2004 and training on the new field manual will take place in early 2005..

Milestone B. Each year develop one new forest demonstration site in a Service Forest Project Area that incorporate Nonpoint Source Best Management Practices (BMPs) for silviculture.

- A new forest BMP demo site was initiated in 2004. The demo site was developed on Game Commission property in Lancaster County.

Milestone C. By 2000, develop a self-evaluation form for practitioner/landowner to evaluate BMP installation.

- The self-evaluating timber harvest assessment form has been developed for forest practitioners and landowners to evaluate the effectiveness of BMP installation. Although the forms exist, it takes coordination by loggers, foresters, and landowners to complete the forma and provide the information

Milestone D. By 2004, develop a system to establish BMP baseline implementation. By 2010, develop a system to track BMP implementation.

- The form is developed.

Milestone E. Distribute 500 SFI landowner packets per year to inform landowners of their responsibility for minimizing non-point source pollution. Provide ten landowner workshops on silviculture BMPs per year. Enroll 150 new landowners in the Forestry Stewardship Program (FSP) in 2000.

- During 2004, 1,763 SFI packets have been distributed to landowners prior to timber harvesting.
- Landowner enrollment in the Forest Stewardship Program (FSP) continues.
- FY 2004 saw zero funding for FSP due to the significant number of forest fires in the west.

Milestone F. Increase by five per year, the number of articles/publications in immediate circulation to encourage landowners to establish and maintain riparian forest buffers. The number of workshops held on riparian forest buffers. Amount of cost-share dollars provided by SIP.

- The goal to restore 600 miles of riparian forested buffers by the year 2010 has already been accomplished. A new riparian forest buffer goal of 3,300 miles has been set for the Chesapeake Bay watershed. To date 1,297 miles of riparian buffers have been added.
- Free planting stock was provided to landowners planting riparian buffers.
- The Forest Land Enhancement Program (FLEP) has replaced SIP. This program is at a higher funding level. The Environmental Quality Incentive Program or the EQIP program in the current Farm Bill includes a component for forestry/wildlife.
- TreeVitalize is a new program launched by Pennsylvania to plant more than 20,000 shade trees and add 1,000 acres of forested riparian buffers in Bucks, Chester, Delaware, Montgomery and Philadelphia counties. TreeVitalize purpose includes increasing tree cover and improving air and water quality. For more information go to: www.treevitalize.net

LAKES Challenges and Accomplishments 2004

CHALLENGES

Challenges and goals for the next five years are outlined in DEP's draft 2005 NPS Management Plan. Lake stakeholders and DEP provided input to identify needs and ways to meet these needs in the next five years.

Some of the accomplishments for 2004 and needs for the future include:

- The Pennsylvania Lake Management Society (PALMS)'s website now offers fact sheets, a Directory of Services, linkages and events postings; also available to download is a complete copy of PALMS's "Lake and Watershed Management Handbook" , an up-to-date manual on management techniques for lake restoration and protection, including both in-lake and watershed BMP's. The website is www.palakes.org.

- We are still challenged by needing a better connection with colleges and universities working in the field of lake limnology, and to communicate studies and information across to all lake interests including lake professionals and lake users. At the 2004 PALMS conference, students and professor attended and presented. Annual PALMS conferences are currently the best means of communication and coordinating among lake interests; attendees include not only academia, but citizens, lake users, agencies, lake managers and professionals, and aquatic applicators.

- A better connection needs to be made with water supply people who manage lakes, and to share information on lake management. Many water supplies that are lakes have water chemistry data that could be shared.

- DEP needs to have a lake info page on their website. A lot of lake data and information is stored at DEP but is not now available to the public. Lake data may soon become available through the Department's data managing efforts, (SLIMS) and through POWR (Pa Organization of Watersheds and Rivers). POWR received several grants to facilitate creation of a database for water quality information, and will be accessible to the public for both input and output.

- A funding source needs to be identified for meeting the needs of education and outreach on aquatic invasive species. Lakes need to be protected; once invasions occur, it is vastly more costly to deal with the problems. More assistance from DEP and DCNR, and coordination with the Pennsylvania Fish and Boat Commission (PFBC), would be beneficial. More grant avenues are becoming available for this task. In 2004, DCNR drafted an Invasive Species Management Plan for state lands and waters under their jurisdiction. DEP is still attempting to convene the Governor's Invasive Species Council (multi-agency members) to finalize PA's draft statewide Invasive Species Management Plan. DEP (and perhaps other agencies) needs to keep a connection with this Council for the finalization of the ANS (Aquatic Nuisance Species) Management Plan and to help implement the plan when finalized.

- DEP's statewide lake monitoring continues at a slowed pace, while more information is gathered on lakes that have water quality data but now require fishery data and macrophyte coverage to complete the assessment for determining if lake uses are being met. Citizens continue lake assessments through the Citizens Volunteer Monitoring Program (CVMP) program, through their own Growing Greener grants, and through consultants. Watershed-derived NPS problems continue to be the main reasons for lake impairments, but in-lake practices can often mitigate immediate problems while watershed issues/restoration projects are addressed through separate grants. In-lake practices need to be brought more to the forefront as readily available tools that can improve lake conditions in the short-term, and they need to be more readily fundable.

- To facilitate in-lake management, lake managers are looking to alum treatments to lock lake sediment phosphorus. DEP needs todevelop a permit process (as with herbicides) for alum so that alum treatments are properly supervised and Regional offices are properly notified.

- As identified in the previous five-year plan, a lake classification system still needs to be investigated. In the meantime, DEP is reclassifying some individual lakes (a very slow process) and revising Chapter 93 standards (also a lengthy process). However, in the longer term, lakes still need to be classified and need standards based on lake characteristics, not on streams.

ACCOMPLISHMENTS

Milestone A: By 2003, develop a Pennsylvania Best Management Handbook for Lake Management that includes innovative and traditional approaches to lake management and restoration.

Under a Growing Greener grant, the Pennsylvania Lake Management Society (PALMS) developed this manual. Various chapters in the handbook cover a wide range of lake problems, including permitting issues and procedures, alum treatment, maintenance dredging, aquatic herbicide procedures, storm water problems and solutions, bioengineering, and other topics.

Milestone B: By 2002, develop a comprehensive Pennsylvania Lakes Classification System.

PALMS developed a new database of "significant and important" lakes under a 319 grant Lakes are not specifically addressed in Pennsylvania's *Chapter 93 Water Quality Standards*, and the standards listed largely regard stream conditions to be protected, not lakes. DEP is addressing some of these problems by inserting pertinent lake statements into specific water quality criteria. See Table 3. in Chapter 93. Also, for future lake assessments, DEP is adding biological sampling (fishery information and macrophyte coverage) to assess aquatic life use, recreational use, and human health use so that a lake may be judged on more than just water quality criteria.

Milestone C: By 2003, establish a technical and educational clearinghouse of information to address lake management and restoration and provide outreach to public and private lake managers and owners.

PALMS has established a website that provides outreach and links to lake information. The website is http://www.palakes.org . The ongoing PALMS statewide annual conference (held October 21-22, 2004) continues to be a major outreach avenue connecting lake users to contemporary and innovative lake and watershed management technology. The Lake Wallenpaupack Watershed Management District (LWWMD), and the Pike County Conservation District are also major players in fostering outreach programs for lake users in the Pike and Wayne County areas. The LWWMD website is http://www.lwwmd.org .

PALMS is a partner in DEP's sponsored Consortium of Scientific Assistance to Watersheds (C-SAW), which provides a link for citizen technical needs to lake professionals. C-SAW's goal is to assist watershed groups with the intention to empower and educate them to address their needs. C-SAW's website is http://pa.water.usgs.gov/csaw/. Several conservation districts and citizen groups have used C-SAW to investigate or resolve lake management issues.

Milestone D: By 2003, develop specific NPS TMDL criteria for lakes to reflect lake processes which differ from streams.

Working with Barry Evans at the Penn State University (PSU), the DEP has developed lake specific TMDL models that use chlorophyll as the endpoint. Information from "state of the art" lake modelers such as Chapra are now used in DEP's modeling efforts. Chapter 93 water quality standards are slowly being revised to address lake parameters as well as stream criteria. The **Pennsylvania DEP's Six-Year Plan for TMDL Development** shows nine watersheds with a TMDL completed through 2003.

Milestone E: By 2002, develop specific BMP guidelines for controlling lakeshore erosion. This milestone is covered under Milestone A.

Milestone F: By 2004, develop a clearly defined strategy to control and mitigate exotic species that directly affect lake uses.

In 2002-2003, the DEP, in cooperation with the Sea Grant Program, has nearly completed a draft Invasive Species Management plan; the draft has been under further development in the Pennsylvania Department of Agriculture (PDA). Once this plan is in place, Pennsylvania would become eligible for federal funds to mitigate aquatic species invasions. PDA also hosts the Noxious Weed Task Force, which includes more than just aquatics, to keep state agencies abreast of current invasive species topics and problems.
In recent years, Morris Arboretum has visited many northeastern Pennsylvania lakes and documented species presence, including exotics as well as species of special concern. Surprisingly, many small natural lakes do not yet have aquatic exotics, but most of the larger, public reservoirs do.

LAND DISPOSAL Challenges and Accomplishments

CHALLENGES

- Utilization of new on-lot sewage treatment technologies, which has both positive and negative potential consequences for the NPS program. Some pollution from malfunctioning systems will be cleaned up, but development of areas previously unsuitable for on-lot system use may lead to increased suburban sprawl and its related impacts on water resources.
- Providing continued support to conservation districts in implementing PA's biosolids program past the initial 5-year period, which ended June 30, 2003.
- The declining number of used oil collection sites, due in part to the increased availability of quick service oil change businesses.

ACCOMPLISHMENTS

Milestone A. Provide on-lot sewage treatment-related training annually to 1,200 sewage enforcement officers (SEO's) and 1,000 local government officials.

All 1,152 current SEO's and many local government officials have received on-lot sewage treatment training in 2004, though it is difficult to get municipal officials to attend the training sessions which are offered. Creation of the SEO College has institutionalized this training (mandatory for SEO's since before 1994) and improved its organization, quality and program relevance. Updates to the Sewage Enforcement Officer's Guidance Manual and other technical and policy documents are completed and distributed to local officials and regional DEP staff as needed. Efforts are currently underway to utilize registration fees from septage haulers to provide expanded training opportunities for this group and for on-site system installers as well.

Milestone B. By 2004, increase by 50 the number of local governments that adopt sewage management programs in accordance with Act 537. Also increase the number of on-lot remediation projects funded through PENNVEST.

As of December 10, 2004, an estimated 143 PA municipalities had adopted sewage management programs. Recent efforts to encourage adoption have moved away from State enforcement to a grassroots approach, where local governments which have successfully implemented a program are encouraged to share their experience with other communities through a peer network. Somerset Rural Electric Cooperative has completed development of a model to compare the cost of instituting a local sewage management program with that of constructing a centralized treatment system. The organization is also working on the preparation of model sewage management ordinances, which could be adopted by local governments as part of a comprehensive management program.

Through December 31st, PENNVEST had approved 25 loans in 2004 for remediation (repair or replacement) of on-lot septic systems, with a value of $420,189. This brought the total number of loans approved since the program's inception to 372, and the total value to $4,033,149.

Milestone C. By 2001, certify 400 people for land applying biosolids.

In order to land apply biosolids or residential septage in PA, a facility must be covered under one of three statewide general permits: PAG-07 for Exceptional Quality Biosolids, PAG-08 for Biosolids, and PAG-09 for Residential Septage. To receive approval under one of these general permits or a biosolids individual permit, the products to be applied must meet strict quality standards for pathogen reduction, vector attraction reduction, and pollutants. As of February 2005, there were 270 facilities permitted to land apply in PA, including 26 exceptional quality biosolids, 156 biosolids, 85 residential septage and 3 individual generator permittees.

There are over 800 sites throughout the State approved for biosolids use, including both mine reclamation and agricultural sites. When land applying biosolids, strict management practices (including application rates, land slopes and setbacks from streams, wetlands, and sinkholes) must be followed in order to limit the potential for runoff.

Once a facility receives approval to beneficially use biosolids, at least one person responsible for land application activities must complete the PA DEP's mandatory training program. This program was initiated in 1998 and, as of December 2004, approximately 1,000 people had completed the training.

The PA DEP currently maintains three fact sheets on the subject of land application of biosolids. Additional information is available from Penn State University, which has conducted extensive research on the topic over the last 30 years.

Milestone D. By 2002, develop a public service announcement for TV and radio on the proper disposal of household wastes. By 2004, conduct three household hazardous chemical collections per year, 350 Chem Sweeps on individual farms per year and have 950 used oil collection stations located throughout the State.

A number of public service announcements have been developed and aired in recent years concerning littering and waste recycling. Although no such campaigns have been implemented for farm and household hazardous wastes to date, several brochures, manuals and a video tape have been prepared and distributed Statewide.

During the period 1999 through 2003, locally sponsored household hazardous waste collections, with financial support from PA DEP, involved 21 to 30 communities (average 24), 21,575 to 30,000 participants (average 25,582) and 1,100 to 1,548 tons of material collected (average 1,301) per year. In 2004, these collections involved 39 communities, 43,589 participants and 2,074 tons of material collected.

Over the same period, community pesticide collections ranged from 0 to 8 per year (average 5) and Chem Sweeps on individual farms from 111 to 172 per year (average 131). Along with central collection sites around the State, these activities collected, recycled and properly disposed of 453,974 pounds of waste pesticides in that time, an average of 90,795 pounds per year. In 2004, 19 community pesticide collections, 148 farm-to-farm pickups and 6 central collection sites accumulated 86,986 pounds of waste pesticides.

Used oil collection stations around the State numbered 846 on December 31, 2004, an increase of six over the previous year.

Milestone E. Conduct two environmental and energy audits in each DEP region each year. By 2000, distribute Farm-A-Syst outreach information to all 67 PA counties. By 2001, conduct six Home-A-Syst outreach activities Statewide.

The DEP's six regional offices conducted a total of 55 pollution prevention and energy efficiency site visits during 2004, an average of just over 9 visits per region. The average of visits per region for the years 2002-2004 stands at just over 14 per year.

The Farm-A-Syst program continued work on four new worksheets and one revision during calendar year 2004. New publications are being prepared on the topics of pasture management, barnyards and animal concentration areas, winter feeding areas and poultry production. A previous worksheet on stream and drainage way management is currently being revised and updated. The printing of four new worksheets will bring to 15 the total number of publications developed by this program since its inception. Each of these materials has been distributed Statewide through the Penn State Cooperative Extension network and county conservation district offices.

By the end of 2004, Penn State Cooperative Extension agents had conducted at least 21 Home-A-Syst outreach activities across the State, with the bulk of those occurring in 2001.

SECTION IV. Pennsylvania Successes

Project and Program Success Stories

Much of its success in Pennsylvania's Nonpoint Source program is due to close working relationships with local partners. The Section 319 NPS Implementation program, Growing Greener Initiative, and many local initiatives are working with local, state, federal projects and programs to improve our water resources.

We are starting to see how these projects are impacting water quality by reducing nitrogen, phosphorus, sediment, iron, aluminum, and other pollutants contained in storm water, to receiving waters. Many projects are funded because there are potential benefits to water bodies that are documented as being impaired by nutrients, sediment, hydrologic changes, storm water, and abandoned mine drainage impacts.

Pennsylvania seeks to use limited Section 319 NPS program funds and USDA, PDA, and other dollars where they will have a high rate of return on the investment.

Following are highlights of successful non-point source implementation projects and programs over the past year.

Bell Colliery AMD Remediation, Schuylkill County

A project dedication was held on September 21, 2004 for the Bell Colliery, an AMD discharge in the Schuylkill River Basin, where a passive treatment system was successfully implemented through Section 319 funding. This Project is identified as # 2215 from Pa.'s FFY 2002 grant. The total grant amount was $270,245. Local sponsors are the Schuylkill Conservation District and a local watershed group, the Schuylkill Headwaters Association.

Whitethorn Creek Watershed Ag BMP Project, Westmoreland County

This project continued a water-sampling project that had started under a prior PDA grant. Whitethorn Creek is a sub watershed of only 7000 acres that was severely impacted by agriculture. Many Ag BMPs have been installed in the watershed in the past four years. The seven farmers that we have been working with in the Whitethorn area have spent a total of $249,491.47. We started water testing on 12 different sites at strategic points in the watershed. Then we noticed a private sewage leak into the stream immediately above one of our test sites. At that point we decided to test above the sewage leak and continue testing below the leak both. So we have had 13 testing points since the first quarter of 2002.

Partnerships - The Conservation District's Watershed Coordinator and the Water Quality Specialist were both brought in on this project for technical advice on where to actually set the testing sites. The Water Quality Specialist has used this project to aid in her promotion in her job because of the thoroughness of the entire project. We are working with a sociologist from Penn State to develop a questionnaire to gauge the difference in farmer's attitudes over the length of the project. Other contributors to this project are the PA Fish & Boat Commission and the Westmoreland Bird Club. The Fish Commission completed a fish identification effort with electro shocking. The Bird Club completed 6 bird counts over a 2 year period.

Landowners - Landowners were contacted prior to starting this entire project and we had discussions with them about how our goals for the watershed would coincide with their own personal goals for their farms. Most farmers welcomed any help we could give them, but several had a wait and see attitude. We were warned to stay away from one farm in the valley. Eventually that farm was sold to a neighbor who improved it dramatically.

The purpose of this project was to continue a water testing effort in the Whitethorn Watershed at the same time that farmers were installing Ag BMPs through a Growing Greener grant. We were trying to ascertain if there was a direct correlation between certain Ag BMP installations and stream water quality. Our experiences are as follows:

- Water Quality - There seems to be a gradual improvement in the water quality of the Whitethorn Creek. There have been many variables in each year of testing, though, and we cannot confidently say just yet that the improvement in the water tests have been solely to the installation of the Ag BMPs. Variables have included increased flow of water in the last year and a half, one farmer selling his herd of dairy cows, and a general increased awareness of how animal health relates to animal access to muddy areas.

- Partnerships - We were able to involve the Fish & Boat Commission, County Extension, and the local Bird Club. To this point, the entire project has included the following activities:

- Water testing
- Fish shocking and identification
- Macroinvertebrate identification
- Bird Club of Westmoreland County identifications

- Observations - This series of water tests have been productive but not as much as what we had hoped from the beginning. We now have a baseline of the water quality for the Whitethorn Creek before and during construction of a number of Ag BMPs. We have seen slight improvement during that time, but only further testing at a later date will let us know the level of the water quality as the riparian buffers and the rotational grazing paddocks mature. We do know that the farmers are becoming more cognizant of what happens to the water running through their farm. Just the fact that a farmer knows his operation is being evaluated by water tests seems to positively affect his management.

Pa DEP Energy Harvest Grants Program

The Pa. DEP Energy Harvest Grant program awarded $2,200,403 for manure digesters on farms in five counties in Pennsylvania. This program encourages alternative approaches to energy conservation and production. The use of this technology on animal production facilities has the potentially added benefits of producing a valued fertilizer product that may be transported off site. These systems also have the potential of separating phosphorus from the waste stream and using water for irrigation during drought stressed years.

Project Grass – Rotational Grazing Initiative Supported Statewide

A Project Grass Grazing Educational Coordinating Committee with producer officers was selected and the grazing group set up to meet quarterly in Somerset Pa. with 14 southwestern PA counties in attendance. This initiative began in 1980. The Project Grass Grazing Program went on successfully helping over 500 farms on the grassroots level convert to a grazing program, to establish better fencing techniques, help make available better pasture and grazing-related products, improve water supplies and livestock watering systems, improve and utilize forage species, and improve upon paddock and alleyway layouts. Project Grass Field Days where held through the year on various PG farmer participating farms. Partnerships were formed with the USDA- NRCS, County Conservation Districts, PACD, Pa. DEP, Penn's Corner RC&D, the Penn State University, USDA-ARS Pasture Research Lab, and the FSA.

Over the past year and a half, many accomplishments have taken place. The PG web site was created in 2003 and is updated with current information. It is accessible at http://www.paprojectgrass.org. In May 2004 Project Grass held its second Youth Education Scholarship Contest. In 2004 the second edition of the Project Grass Magazine was printed and distributed. In 2004, 300 Project Grass two-sided logo signs where produced and distributed to the five Project Grass Chapters to give to PG participating grazing farmers. In 2004, 10,000 educational brochures where updated, printed and distributed to all five PG Chapters. In October 2004 Project Grass held its 3rd Annual Project Grass Conference and Field Day in Lancaster County. The six NRCS Project Grass Grazing Specialists are working on the grass root level with farms in all the counties in Pennsylvania, implementing grazing plans and coordinating their Project Grass Chapter meetings.

Tulpehocken Creek Watershed – Berks County Continues work from PL-566 project

The Tulpehocken Creek watershed consists of 140,000 acres in both Lebanon and Berks Counties. The Tulpehocken Creek Watershed Project is an ongoing program that is authorized for funding under the USDA Natural Resources Conservation Service PL-83-566 Watershed and Flood Improvement Program. Twenty-seven agencies and over eighty individuals work together over a period of several years to develop a plan to treat non-point source pollution, improve water quality and restore aquatic habitat through out the Tulpehocken Creek Watershed. Those funds were to be partnered with the 2.9 million dollars that the local interests would towards the project. The local portion comes from the participant's cost-share percentage; cooperating agencies donated time and the sponsor's time. The project plan was submitted to USDA in 1997 and was authorized in January of 1998 when a symbolic check was presented to the Sponsors for $5.9 million dollars. The funds were to be allocated over a ten-year period starting in 1998.

The first year the project received and allocated $683,000, the second year $1.06 million was contracted to various projects. Over the next few years the initial allocation for implementing any projects steadily decreased. The Project had to rely on receiving "turn-back" funds from other projects that could not

allocate their initial allocations by a prescribed date. In 2002 and 2003 the Tulpehocken Project did not receive an allocation and again had to rely on the leftovers from other projects. In 2003, only one project could be funded for a total of $63,000. The Watershed Project was able to ensure funding for fiscal year 2004, buy having a project specific funding earmark attached at the appropriate place in the Federal Budget. Through the continued efforts of multiple stakeholders and Congressman Holden, the establishment of the earmark guaranteed that Tulpehocken Project would again receive the level of funding promised to it in 1998. Since the inception of the project, $2.84 million has been allocated in the watershed, notably; $2.25 million of that total has already been paid to the project participants. These funds not only address the environmental concerns of the farming operation but also help sustain productivity and profitability.

The Sponsors have asked that an earmark for $1.1 million dollars be included in the budget for 2005, but at last notification one has not been included.

The benefits from this watershed projects are far reaching. Not only are the residents of the watershed able to recognize and benefit from improved water quality, but also many people outside of the watershed visit Blue Marsh Lake and the Tulpehocken Creek. Improving water quality includes reducing the amount of sedimentation into the Lake, that sedimentation also carries nutrients into the streams and lake. One benefit

of reducing nutrients, it will help decrease the cost of treatment for Western Berks Water Authority and improve the quality of water they provide to their customers. Another benefit when improving water quality is the ability of the steam to better support aquatic life and allow it to thrive. This allows for additional recreation and fishing opportunities that also bring an economic benefit to the surrounding communities.

State Conservation Commission Adopts Interim Phosphorus Planning Standards for Farmers

The Pennsylvania State Conservation Commission (SCC) approved an interim phosphorus policy at its May 2004 meeting, which mandates that all nutrient management plans submitted for Pennsylvania Nutrient Management Act Program approval after May 25, 2004 must address phosphorus management. This interim policy will remain in effect until the Commission finalizes revised regulations specifically addressing this issue. These proposed regulation revisions have been publicly noticed in August of 2004. The SCC expects them to be finalized in early to mid 2005.

Current program regulations require farmers submitting plans for approval to develop and implement nutrient management plans balanced to a crop's nitrogen needs. The interim policy now directs farmers to also consider phosphorous application rates as a part of their plans. Farmers are directed to use the Pennsylvania Phosphorous Index recently developed by USDA Agricultural Research Service and Penn State to meet this new obligation, but planners may offer alternative phosphorus management approaches which the Commission will consider on a case-by-case basis.

In a related action, at its May 2004 meeting the Commission also approved increased cost-share rates for farmers under its Nutrient Management Plan Development Incentive Program. This action will help farmers offset the increased cost incurred in developing the plans that include the new phosphorous considerations.

State Conservation Commission Considers Significant Revisions to Pennsylvania's Nutrient Management Law

The Pennsylvania State Conservation Commission (SCC) published proposed revisions to the current Nutrient Management Act Program regulations on August 7, 2004. Pennsylvania's Nutrient Management Act regulates nutrient handling and applications by Concentrated Animal Operations (CAOs), which are those animal operations having an animal density higher than 2,000 lbs. per acre.

These proposed revisions address a number of significant issues relating to manure and nutrient management. Some of the major issues being addressed through this regulatory proposal are:

- Requiring a Phosphorus-Index component of a nutrient management plan.
- Requiring an exporter of manure to:
  - Obtain a signed agreement with their importers, documenting the importers' acceptance to receive manure and use it properly.
  - Develop acceptable manure application rates and procedures for the importing sites using a Nutrient Balance Sheet.
  - Abide by a 150' manure application setback from water bodies on importing farms unless the importer develops an approved Nutrient Management Plan under the Act.
  - Abide by additional manure application setbacks for importing sites relating to private and public wells and sinkholes.
  - Ensure that any commercial manure hauler or broker used by the CAO, be certified under Pa's Manure Hauler/Broker Certification Law.
- Requires an Erosion and Sedimentation Control Plan for all plowed and tilled lands on the operation (conservation plan), prior to nutrient management plan approval.

- Adds horse boarding and other non-production livestock operations into the program.
- Establishes an upper limit for the application of liquid manure.
- Provides a 100-foot private drinking well setback for manure applications.
- Establishes restrictions for the application of manure on lands having less than 25% cover.
- Establishes criteria for the in-field stacking of manure.
- Requires to development of an Emergency Response Plan prior to the approval of a nutrient management plan.

These regulation revisions were released for public comment on August 7, 2004. The SCC expects them to be finalized prior to the summer of 2005.

Agriculture Linked Investment Program

The Agriculture-Linked Investment Program (AgriLink) is a low interest loan program established by the State Treasury to assist farm operators in the implementation of Best Management Practices (BMPs) in approved nutrient management (NM) plans. Administered by the State Treasury in cooperation with the State Conservation Commission, the program relies on the cooperation of approved state depositories (local lending institutions) and the Farm Credit Service. This program is available to farmers throughout Pennsylvania and provided up to $75,000 in low interest loans.

To learn more about the Act 6 funding go to: http://panutrientmgmt.cas.psu.edu/main_financial_assist.htm

Commercial Manure Hauler and Broker Certification Program

New legislation, the Commercial Manure Hauler and Broker Certification Act (Act 49 of 2004) was enacted creating a certification program for all commercial haulers or brokers that handle, transport, distribute and/or apply manure generated on agricultural operations in Pennsylvania. The program objective is to insure that manure haulers or brokers are knowledgeable of proper manure handling and land applications issues related to nutrient management plans as well as knowledgeable of Pa's Nutrient Management Act, Clean Streams Law and federal CAFO activities. The legislative provisions are closely linked to revisions included in the Nutrient Management Proposed Rulemaking for the Pa Nutrient Management Act regulations. The Pa Department of Agriculture is currently developing regulations for implementation of the certification program and anticipates having an effective certification program in early 2006.

Schuylkill Action Network Receives $1.15 million EPA Grant

The U.S. Environmental Protection Agency has announced a $1.15 million grant to support the continuing efforts of the Schuylkill Action Network (SAN) to address water quality issues in the Schuylkill River Basin in southeastern Pennsylvania.

The Schuylkill Action Network was formed in 2003 and includes: The EPA, Pennsylvania DEP, Philadelphia Water Department, Delaware River Basin Commission, Partnership for the Delaware Estuary, conservation districts, local, state and federal agencies, watershed organizations, non-governmental organizations and other stakeholders.

Out of a field of 114 applicants nationwide, the SAN was one of 14 organizations awarded grant money in the EPA's nationwide Watershed Initiative Program. The SAN has identified more than 70 high priority water quality projects to be addressed through the grant, with projects falling into four critical areas:

1. Controlling storm water impacts;
2. Controlling agricultural impacts;
3. Controlling and removing acid mine drainage impacts; and
4. Developing market-based incentives for pollution trading and innovative technology impacts.

Of the $1.15 million granted to the SAN, the Agriculture Workgroup will receive approximately $300,000 for conservation planning, BMP projects focusing on animal crossings and stream bank fencing, and technical assistance.

Between 800 and 1,000 parcels of agricultural land within impaired stream areas of the Schuylkill watershed were considered for BMP projects. The Philadelphia Water Department utilized the EVAMIX program as a decision support tool when working with the Ag Workgroup to rank projects for BMP implementation. The Workgroup decided on the following criteria and weighting for use with the EVAMIX software:

- Headwaters 25%
- Easements 15%
- Stream Length 30%
- Stream Order 15%
- Acreage 15%

The Ranking Subcommittee ranked parcels according to these criteria to determine the top 50 projects in the watershed. Parcels have been identified for surveying and are clustered in the following areas: Upper Maiden Creek, Lower Maiden Creek, Mill Creek and the Manatawny Creek.

In education and outreach efforts, two articles were published in the Lancaster Farming, one on the SAN, and one on the EPA Initiatives grant received. A BMP tour, sponsored by DEP, was postponed until Spring. Packets of information on buffers have been compiled by the Berks District intern and were handed out at local fairs.

The SAN received comments from the EPA on the Draft Work plan on October 19 and has begun to address the issues raised in these comments.

After funds have been distributed, selected landowners will be approached and conservation planning and BMP projects will begin.

Pennsylvania Environmental Agricultural Conservation Certificate of Excellence (PEACCE) Program 2004 Accomplishments

In 2004 the PEACCE program applied to become incorporated. The Board is comprised of representatives from the Pennsylvania Environmental Council (PEC), Penn State University (PSU) and the Pennsylvania Association of Conservation Districts (PACD). The program also utilizes an advisory board composed of multiple partnering agencies and organizations to provide guidance in the implementation of the program.

The PEACCE Program was also successful in obtaining a Growing Greener grant in 2004 from the PA Department of Environmental Protection to provide funding for promotion, signs, displays and administrative support to further advance the program.

There were a number of farmers who participated in the various components of the PEACCE program during 2004. PSU provided the Environmental Awareness Course for farmers in 2004 and a total of 144

farmers were trained through the course offerings. There were 105 farmers in Pennsylvania that completed the on-farm assessment and environmental review program in 2004.

In the end, there were 14 farms that were successfully certified under the PEACCE program during 2004. There have now been a total of 46 farms certified since the program began in 2002. In November, the PEACCE program participated in the awards luncheon of the Lebanon County Conservation District to provide PEACCE certificates to producers from that county who successfully achieved certification.

There are still 12 farms that began the certification process in 2004 that are still in the process of completing the requirements for certification. It is anticipated that these farms as well as a number of new farms will complete the certification process in 2005.

PennDOT Partnership on Natural Stream Channel Design Projects

The York Chapter 67 of the Izaak Walton League (IWLA), funded by a Section 319 grant, contracted with Aquatic Resources Restoration Company to develop the design, obtained the necessary permits and construct a natural stream channel restoration on Seaks Run, a tributary to Codorus Creek in York County.

Seaks Run parallels State Road 216 where the stream was eroding the roadbed resulting in a real problem for PennDOT. Natural stream channel design was the most cost effective way to really change the flow of the stream and thus eliminate or minimize the roadbed erosion problem.

PennDOT originally entered into an Agility Agreement to provide in-kind matching funds for this project, but later PennDOT's attorneys determined that the Agility Agreement could not be used in conjunction with a DEP grant. As a result of this cooperative effort to solve a common problem, PennDOT has adopted the rock specifications and added the excavator with a thumb needed for natural stream channel design projects to their approved list. PennDOT can now use the maintenance funds that they would have had to expend to remove the problem, protect and stabilize the roadbed to partner with watershed groups and provide the support/funding for natural stream channel restoration projects.

Wells Creek Abandoned Mine Drainage (AMD) Remediation Projects

Construction of three passive treatment systems on discharges in Wells Creek watershed, Somerset County, PA, resulted in the colonization by macroinvertebrates in the impaired portion of Wells Creek. Stream water quality improved enough that in 2004 the Wells Creek Watershed Association (WCWA) stocked

trout in areas of Wells Creek that were once dead. Projects were funding through a combination of U.S. Clean Water Act Section 319 and Growing Greener Grant Funds.

Sampling in 2003 resulted in the capture of only one individual macroinvertebrate in the AMD impaired section below Adams PA. In 2004, after the construction of the two passive treatment systems in Adams PA, 54 individuals representing 10 taxa were captured. Dramatic improvements were also noted below the Onstead project where the 2003 capture of 19 individuals in 4 taxa increased to 61 individuals in 7 taxa in 2004.

A big thanks is due to WCWA President Thurman Korns and other association members for their perseverance in getting these projects on the ground. DEP and PA Fish and Boat Commission (PFBC) have been conducting annual biological surveys to document stream recovery. The DEP Mine Inspector also plans to continue sampling below the projects to document additional stream improvements.

Electrofishing of Wells Creek by the PFBC in October 2004 resulted in the capture of 5 species of fish, creek chubs, brown trout, both adults and fingerlings, white suckers, hognose suckers, and blacknose dace, downstream of the Adams projects. Local students from Somerset High School assisted the PFBC in the 2004 fish survey. Students in the honors biology class plan to use the results of the Adams project environmental assessment as a class research paper.

Potomac River Source Water Protection Initiative Gets Started

The Interstate Commission on the Potomac River Basin (ICPRB) is spearheading a new multi-state source water protection (SWP) initiative called the Potomac River Basin Drinking Water Source Protection Partnership. The main goal of this Partnership is to provide a coordinated approach to SWP within the basin. In addition to ICPRB, the Partnership currently consists of DC-area water suppliers using the main stem; state agencies responsible for source water assessment/protection in MD, VA, WV and PA; the District of Columbia and EPA. Water suppliers in other parts of the basin and other governmental agencies with a role in SWP will be invited to participate in the future.

On Friday September 24, 2004 a kick-off/media event was held at Little Seneca Reservoir in Black Hill Regional Park near Germantown, MD. The event included a formal resolution signing ceremony.

Source water protection efforts within Pennsylvania's portion of the basin are already underway including the Marsh Creek Watershed Protection Project that is helping to protect the drinking water sources used by Gettysburg Municipal Authority. Primarily using a DEP grant funded by civil penalties assessed against Westinghouse Electric Corp. for multiple Clean Streams Law violations involving ground-water contamination in the Gettysburg area, the Adams County Conservation District and the Land Conservancy of Adams County are working together to acquire conservation easements on large land parcels within the source water protection area for Gettysburg's intake on Marsh Creek and nearby public supply wells. Nearly 500 acres of land have conservation easements in place under this project. Downstream water suppliers in Maryland and metropolitan DC will also realize benefits from these efforts.

For more information, see the ICPRB at www.potomacriver.org or the Pa DEP Source Water Protection program at www.dep.state.pa.us DEP Keyword "Source Water Protection."

NPS Pollutant Load Reduction Estimates – Section 319 NPS Program Data

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The primary reporting method for the Section 319 NPS program is the Grants Reporting and Tracking System (GRTS). This system reports on various aspects of the Section 319 program, most notably how Section 319 funds are spent. A Results Work Group was established in 2001 and developed several recommendations concerning improved reporting for the Section 319 program through GRTS. The EPA and state work group members have worked together to ensure that the current GRTS requirements appropriately balance the need to provide quality information on the results being achieved by the Section 319 program with the need to avoid onerous and duplicative reporting for states.

The main Results Work Group recommendations are to:

1. Identify where Section 319 projects have helped lead to water quality improvements through links to other databases, i.e. WATERS.
2. Focus on reporting load reductions and other measurable accomplishments.
3. More precisely geo-locate and report information related to Section 319 projects.

A summary of Pennsylvania's nonpoint source pollutant load reductions is provided as a tool to measure the success of the NPS implementation program. Pa has been keeping this data current for active projects to the best of our ability. We have summarized data from GRTS for the FFY2001 through FFY2004 grants.

Sediment and nutrients are the two required water quality impairment concerns at this time, for the purposes of reporting in GRTS. Following the Section 319 NPS Implementation Guidance and Region III NPS program guidance for GRTS, Pa. provides current progress in reducing sediment and nutrient loads for surface waters where NPS implementation projects are being funded. We have just started to complete some of our projects in the earlier grants. Thus, many projects are not yet completed and will need to have data inputted as the projects progress toward completion.

The following data are for Stream Channel Stabilization projects, or portions of projects, that have been reported results "to date." This summary of project data does not represent projects that have been 100% completed.

Table 7. Stream Channel Stabilization Project Data

Grant / # Projects Reporting to date	**Total Project Funds Committed to Projects**	**Channel Stabilization completed (feet)**
FFY2001		
3	$543,080.	6,030.
FFY2002		
4	$754,476.	8,130.
FFY2003		
1	$210,450.	3,100.
FFY2004		
0	$0	0
Total		
8	$1,508,006.	17,260.

Table 8. Stream bank and Shoreline Protection Project Data

Grant / # Projects Reporting to date	Total Project Funds Committed to Projects	Stream bank & Shoreline Protection completed (feet)
FFY2001		
19	$2,358,285.	258,432.
FFY2002		
11	$878,421.	18,255.
FFY2003		
2	$367,192.	7,800
FFY2004		
1	$110,000.	2,300.
Total		
33	$3,603,898.	286,787.

Projects that are designed to reduce soil erosion and nutrient pollution problems include those addressing agriculture, construction, storm water and urban runoff, hydrologic and habitat modification, and silviculture. For these types of projects, the EPA requires states to estimate load reductions and record this data in GRTS. In keeping with this requirement, Pa. tries to include data in the tracking system as projects, or parts of projects, are completed.

The following data represents load reduction estimates for projects, or portions of projects, that have been completed and where data has been provided. The data does not represent projects that are all 100% complete.

Table 9. Cumulative Sediment and Nutrient Load Reduction Estimates

Grant / # Projects Reporting	Nitrogen Reduction (lb/yr)	Phosphorus Reduction (lb/yr)	Sedimentation & Siltation Reduction (tons/yr)
FFY2001			
20	565,551.	187,003.	12,180.
FFY2002			
19	58,238.	15,924.	5,984.
FFY2003			
7	45,452.	11,644.	20,801.
FFY2004			
1	494.	198.	140.
Total			
47	669,735.	214,769.	39,105.

FFY2001projects are not required by the EPA to report pollutant load reductions. We went ahead and tried to estimate reductions for these projects to account for the projects that were having an impact on nutrient and sediment loads within the watershed, especially those watersheds with approved Total Maximum Daily Loads (TMDLs) and water bodies on the 303(d) list having documented impacts caused by nutrients and sedimentation-siltation. Some project sponsors have readily agreed to work with the Pa. DEP project advisor, using several different methods to estimate reductions. Other project sponsors have not been willing to do anything other than report the number of BMPs actually installed. The Pa DEP continues to offer assistance to help project sponsors in this task.

Many projects in the FFY2002 grant have been completed. Most projects in the FFY2003 and FFY2004 grants have not been completed. Our primary need is to complete the data for all ongoing projects designed to reduce nutrient and sediment problems.

USDA Conservation Programs Evaluated

The 2002 Farm Bill authorized $38 billion in tax dollars to fund conservation practices on farms and ranches across the nation. This is about 80 percent above the level set under the 1996 Farm Bill. It is widely recognized that these conservation programs protect millions of acres from soil erosion, enhance water and air quality, promote wetland and wildlife habitat restoration and preservation, and conserve agricultural water use.

However, the environmental benefits have not been reported and previously quantified at the national level. This is the goal of the new Conservation Effects Assessment Project (CEAP), a USDA cooperative effort among the National Agricultural Statistics Service (NASS), Natural Resources Conservation Service (NRCS), and the Farm Services Agency (FSA).

Tracking the environmental benefits of these programs will allow policy-makers and program managers to implement and modify existing programs and design new programs to more effectively and efficiently meet the goals of Congress. Annual reports summarizing the benefits of conservation programs will be produced beginning in 2005 and extending through 2008.

The delay in the initial report is to wait for two surveys in late 2003 and 2004. About 10,000 points have been selected nationwide. Trained interviewers will contact the farm operator of the field containing each point between October and December 2004. Introductory letters have been sent to each selected operator. There are 230 points in Pennsylvania.

APPENDICES

Appendix I

USDA Farm Bill Conservation Programs in Pa. 2004

The 2002 USDA Farm Bill provided a substantial increase in funding for several programs, and expanded the scope of programs administered by the FSA and NRCS.

Agricultural Management Assistance (AMA)

- Pa has targeted conversion to organic farming, irrigation, pest management, windbreaks, and grazing.
- $1.448 million initial allocation to Pa. in 2004

Conservation Reserve Program (CRP)

- For practices that reduce soil erosion and water pollution, benefit wildlife.

Conservation Reserve Enhancement Program (CREP)

- For practices that reduce erosion and water pollution, benefit wildlife.
- Enhanced payments for wildlife benefits and higher water quality benefits.
- Available in all 43 counties in the Chesapeake Bay watershed, and all 16 counties in the Ohio River watershed.

Conservation Security Program (CSP)

- Goals are to maintain conservation, install new practices and enhancements.
- The Raystown Branch of Juniata River was one of 18 watersheds selected nationwide for CSP in 2004; signup ended July 30, 2004.

Environmental Quality Incentives Program (EQIP)

- For practices that reduce erosion, water and air pollution, benefit at-risk species.
- Pa. has targeted livestock, grazing, cropland erosion, conversion to no-till, anaerobic digesters.
- $10.006 million total allocation to Pa. in 2004.

Farm and Ranchland Protection Program (FRPP)

- For establishing permanent conservation easements.
- Conservation plan required.
- $3.955 million initial allocation to Pa. in 2004.

Forest Land Enhancement Program (FLEP)

- Run by the USDA Forest Service through the Pa. DCNR, Bureau of Forestry
- Stewardship Plan encouraged.
- Practices include plan preparation, timber management, wildlife habitat.
- No allocation in 2004.

Grassland Reserve Program (GRP)

- L/T or permanent grassland easements, or multiple-year rental agreements.
- Must maintain land in grass and can be grazed or hayed.
- Conservation plan required.
- $800,000. initial allocation was made to Pa. in 2004.

Wildlife Habitat Incentive Program (WHIP)

- For practices that benefit wildlife habitat.
- Pa. has targeted at-risk wildlife, especially grass nesting species.
- $240,000. initial allocation was made to Pa. in 2004.

Wetland Reserve Program (WRP)

- Includes L/T or permanent easements, or wetland restoration agreements.
- $249,000. initial allocation was made to Pa. in 2004.

Appendix II

Pennsylvania NPS Liaison Workgroup Partners

Local Organizations & Private Sector Partners	Aquatic Resources Restoration, Inc.
	Alliance for the Chesapeake Bay
	Canaan Valley Institute
	Eastern Pa. Coalition for Abandoned Mine Reclamation (EPCAMR)
	F. X. Browne, Inc.
	Hardwood Lumber Manufacturers Association
	Keystone Stream Team
	League of Women Voters of Pennsylvania
	Pa Lakes Management Society (PALMS)
	Pa Association of Conservation Districts
	Pa Organization of Watersheds and Rivers
	Pa Rural Water Association
	Skelly and Loy, Inc.
	Sustainable Forestry Initiative of Pennsylvania
	Western Pa. Coalition for Abandoned Mine Reclamation (WPCAMR)
	Western Pa. Conservancy, Watershed Assistance Center
Colleges and Universities	The Pennsylvania State University and Cooperative Extension
	Delaware Valley College of Science and Agriculture
	Villanova University
State NPS Program Lead State Partners	Pa Department of Environmental Protection (DEP)
	Pa DEP Grants Center
	Pa Dept. of Conservation and Natural Resources (DCNR)
	Pa DCNR Citizens Advisory Council
	Pa Department of Agriculture and the PDA Hardwood Council
	Pa Fish and Boat Commission, Pa Game Commission
	State Conservation Commission
	Pa Department of Transportation (PennDOT)
	Pa Infrastructure Investment Authority (PENNVEST)
	Pa Farm Bureau
	Pa Builders Association
	Pa Chamber of Business and Industry
	Pa Department of Community and Economic Development (DCED)
	Governor's Center, Pa DCED
	Pa State Association of Township Supervisors (PSATS)
Federal Partners	U.S. Environmental Protection Agency
	U.S. Fish and Wildlife Service
	U.S. Department of Energy, Pittsburgh Energy Tech Center
	U.S. Department of Interior, Office of Surface Mining
	U.S. Geological Survey (USGS)
	USDA, Natural Resources Conservation Service and Farm Services Agency
	U.S. Forest Service
	National Park Service
	Ohio River Basin Commission
	Interstate Commission on the Potomac River Basin
	Susquehanna River Basin Commission
	Delaware River Basin Commission
	Ohio River Valley Water Sanitation Commission